

STANDARDS DEVELOPMENT BRANCH ONTARIO
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TECHNICAL MEMORANDUM

AMBIENT AIR QUALITY SURVEY IN THE VICINITY OF THE DOMTAR (CASSIDY WORKS) TAR PLANT HAMILTON, ONTARIO OCTOBER - NOVEMBER 1985

ARB-219-85-AQM

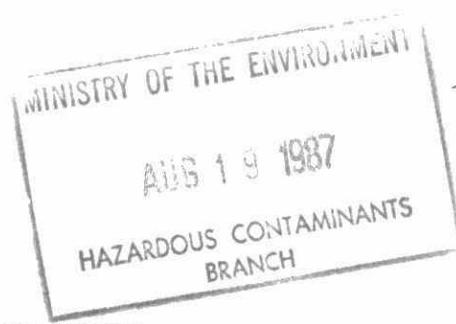
December, 1985

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Ministry
of the
Environment

Dr. David Balsillie, Director
Air Resources Branch



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TECHNICAL MEMORANDUM
Ambient Air Quality Survey
in the vicinity of the
Domtar (Cassidy Works) Tar Plant
Hamilton, Ontario
October, November
1985

Prepared for:
the West Central Region
Ministry of the Environment
ARB-219-85-AQM

Prepared by:
Ronald W. Bell
Senior Project Scientist
Air Resources Branch
Ministry of the Environment

December, 1985

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SUMMARY

The Domtar Tar Plant (Cassidy Works) on Strathearne Avenue in Hamilton was found to be a source of total reduced sulphur compounds (TRS) and the measured emissions downwind of this plant exceeded 0.027 ppm (parts per million)- a Provisional Guideline designed and applicable only to kraft pulp and paper mill emissions but used solely as a benchmark in this report. The largest maximum 30-minute average ground level concentration of TRS was determined to be 0.10 ppm and the overall mean TRS concentration (based on approximately 12 hours of acquired data during 6 different monitoring periods) was 0.026 ppm. The largest maximum 30-minute average TRS concentration determined upwind of this plant was 0.003 ppm.

Significant concentrations of carbon monoxide (CO) and oxides of nitrogen (NO_x) were also measured in the vicinity of this plant but the sources were deemed to be of a high temperature origin - i.e. for example, vehicular traffic blast furnaces, etc. The largest maxima 30-minute average concentrations for CO and NO_x were 4.66 and 0.15 ppm respectively. The applicable Environmental Criterion and Standard are 30 and 0.25 ppm respectively.

This Domtar Tar Plant was also found to be a source of non-methane hydrocarbons (TH-M). From the analyses of the acquired data, approximately 1 ppm of TH-M may be attributed to this source.

From the analyses of 17 30-minute gas chromatographic (GC) samples acquired downwind of this plant, the total hydrocarbon loadings ranged from 127 to 1650 ug/m^3 with a mean concentration of $700 \text{ ug}/\text{m}^3$. The alkane fraction accounted for 23% of these loadings (mean concentration of $161 \text{ ug}/\text{m}^3$), the aromatic fraction 69% (mean concentration of $484 \text{ ug}/\text{m}^3$) and the chlorinated fraction 5% (mean concentration of $32 \text{ ug}/\text{m}^3$). No exceedances of any Environmental Standards, Criteria or Guidelines were measured for any of the over 120 specific organics that the field GC's could identify and quantitate. Naphthalene was identified in the downwind samples and although its concentrations appear to be significant, no quantitation could be or is given.

INTRODUCTION

During the last 2 weeks of October and the first week of November, 1985, Mobile Air Monitoring Units #1 and #2 (MAMu #1 and #2) of the Air Resources Branch undertook an intensive ambient air quality survey in Hamilton. The main purpose of this survey was to investigate emissions from several potential sources and under different meteorological conditions (particularly inversion conditions), establish a well-defined air quality data base for this city.

This memorandum will deal solely with the results as obtained in the vicinity of the Domtar Tar Plant (Cassidy Works) on Strathearne Avenue. During 5 days of the forementioned time period, the findings of MAMu's #1 and #2 may be directly attributed to the emissions from this plant. During this time, the MAMu's set up at 6 different monitoring periods directly downwind of this plant and acquired approximately 12 hours of continuously monitored ambient air data for the common contaminants (such as total reduced sulphur compounds (TRS), carbon monoxide (CO), sulphur dioxide (SO_2), total hydrocarbons (THC), non-methane hydrocarbons (TH-M), methane (CH_4), oxides of nitrogen (NO_x), nitrogen dioxide (NO_2), nitrogen monoxide (NO), ozone (O_3) and a complete set of meteorological parameters) and 17 discrete 30-minute ambient air samples that underwent immediate gas chromatographic (GC) analyses. In addition and for only 3 of the 5 days, concurrent sampling was performed by the other MAMu upwind of this plant. Three monitoring periods were established during this time and 6.6 hours of ambient air data for the common contaminants and 8 GC samples were acquired. (It is worthwhile to note that since this survey programme ran for 3 weeks, many more "upwind" monitoring periods and results are available but only 3 are presented herein since these dealt solely with and concurrent with the other unit's investigation of the emissions from Domtar.)

RESULTS AND DISCUSSION

All measured air quality parameters were acquired off plant property (usually on Strathearne Avenue) and single source (point of impingement) monitoring was undertaken whenever feasible. Thus the Environmental Standards should apply to the results presented herein.

For the common contaminants, significant ground level concentrations (glc's) of total reduced sulphur compounds (TRS) were measured. As can be seen from the common contaminant table, the TRS concentration of 0.027 ppm (a benchmark concentration used herein and based on the Provisional Guideline that was designed and applicable only to kraft pulp and paper mill emissions) was exceeded during 4 of the 6 downwind monitoring periods with reported maxima 30-minute average glc's of 0.035 (A162), 0.040 (A182), 0.100 (B061), and 0.039 ppm (A063). The overall mean TRS glc was 0.026 ppm (standard deviation of 0.030 ppm) as taken from the merged data set for these 6 monitoring periods and the maximum 1-minute average glc was 0.277 ppm (it is worthwhile to note that the 6th monitoring period (i.e. A063) data does not appear in the formal report presentation of this merged data set -i.e. HAMDOM D001. The reason for this is that the presented data must adhere to the 90% validity rule with respect to continuous time acquisition. For A063, the data acquisition only lasted for 30 minutes and the report time interval (10 minutes) did not span this last data set properly to satisfy the 90% rule. This only applies to the print out of the data with relatively long report intervals and the data itself is included in the final statistical treatment of the entire data set.) From the TRS glc data acquired upwind of Domtar, the maximum 30-minute average glc was determined to be 0.003 ppm and the overall mean glc was 0.002 ppm. Thus from these results, the Domtar Tar Plant does appear to be a definite source of TRS.

For carbon monoxide (CO), significant glc's were also measured but the findings could not be directly attributable to the gaseous emissions from this Domtar Tar Plant. For example, on November 6th, the maximum 30-minute average CO glc measured downwind of Domtar was 4.21 ppm whereas 4.66 ppm was measured upwind. The air mass over southern Ontario was moist yet stable on this day, the winds were nominally less than 10 km/hr and very little atmospheric dispersion was evident. The API (Air Pollution Index) for Hamilton was elevated and thus, the most obvious source for this contaminant was deemed to be vehicular exhaust. Another interesting point of note is that since the Environmental Criterion for CO (i.e. 30 ppm for a 1-hour average glc) was never exceeded for this entire survey, specific source investigations for this pollutant need not be a consideration in this assessment - i.e. CO was deemed not to be a problem in Hamilton at this time.

Similar statements could be made for the measured concentrations of the oxides of nitrogen (NO_x). Both upwind and downwind measurements of this

pollutant resulted in significant and similar concentrations - i.e. the maximum 30-minute average NO_x glc measured upwind of Domtar was 0.11 ppm (A243 and A063) and for downwind 0.15 ppm (B241 and A063). The NO_x Environmental Standard (as NO_2) of 0.27 ppm was not exceeded and since the measured quantities were essentially the same upwind as downwind, the most plausible source(s) was deemed to be vehicular traffic or some other high temperature combustion process in the area - for example the steel mills, blast furnaces, etc.

All measured concentrations of ozone were reasonably low. The maximum 30-minute average of O_3 glc (as determined from the merged data set) was 0.06 ppm. The Environmental Standard is 0.10 ppm.

There is no Environmental Standard nor Guideline for the measured concentrations of non-methane hydrocarbons. Rather these measurements were used as quantitative backups for the GC sampling programme and assured that the acquired GC samples were taken downwind of a particular, designated source of hydrocarbons. From the merged data set analyses, the overall mean glc of TH-M as acquired downwind of Domtar was 2.02 ppm and for upwind 0.78 ppm. Thus, on the average, emissions from Domtar did contribute approximately 1 ppm of TH-M to the Environment. The maximum 30-minute average glc measured downwind was 4.12 ppm and for upwind 1.60 ppm.

As to further source delineations, correlation coefficients were established for the common contaminants on the merged upwind and downwind data sets (U001 and D001 respectively). For the downwind data set, only significant positive correlations were established for TRS to TH-M (0.866 for 15 degrees of freedom - significant at or greater than the 95% confidence level using the 2-sided test based on 30-minute average concentrations and 90% valid data) and to CO (0.678 for 16 degrees of freedom at the 95% confidence level) - thus inferring a mutual source for TRS, TH-M and CO.

For the upwind data set, no correlation could be made for TRS with any of the other common contaminants since all measured and concurrent glc's were less than the minimal detectable limit for TRS - i.e. 0.002 ppm. However, a positive correlation was established for TH-M to CO (0.806 for 8 degrees of freedom at 95%) and to NO_x (0.857 for 10 degrees of freedom at 95%). Thus for the upwind data set, a mutual source was inferred for TH-M, NO_x and CO -the

most plausible being high temperature activities associated with the steel works upwind of Domtar (for example the blast furnaces) and/or vehicular traffic.

A more complete source(s) delineation package will become evident following the GC analytical discussion since the GC quantitative results essentially duplicated the TH-M findings.

For the GC analyses, 17 30-minute ambient air samples were acquired downwind of the Domtar Tar Plant. The total hydrocarbon loadings determined from these samples ranged from 127 to 1650 ug/m³ (micrograms per cubic metre) with a mean concentration of 700 ug/m³ and a standard deviation of 372 ug/m³. The alkane fraction accounted for 23% of these loadings (a mean concentration of 161 ug/m³ and a standard deviation of 96 ug/m³), the aromatic fraction 69% (a mean concentration of 484 ug/m³ and a standard deviation of 254 ug/m³) and the chlorinated fraction 5% (a mean concentration of 32 ug/m³ and a standard deviation of 34 ug/m³). The BTX (benzene, toluene, xylenes) concentrations accounted for approximately 43% of these total loadings with the mean (maximum) concentrations being 140 (330), 92(150) and 73(164) ug/m³ respectively. The Environmental Standards for benzene, toluene and xylenes are 10,000 ug/m³, 2,000 ug/m³ and 2,300 ug/m³ respectively.

Two salient features were present in the chromatograms analyzed during this Hamilton survey. Firstly, there were 4 pairs of specific organics and each member of the pairs had similar retention indices. At that time and with the available GC methodology, the positive identification and quantitation of each pair member was ambiguous. All that can be said is that either or both organics may have been present (in each pair) and that a realistic estimate of concentration was given for each member; in particular the pairs were trans-2-pentene and cis-2-pentene, ethylcyclohexane and propylcyclopentane, tert.-butylbenzene and 1,2,4-trimethylbenzene, and 1,4-diethylbenzene and n-butylbenzene. For these 4 pairs, all reported concentrations were low (except for 1,2,4-trimethylbenzene which had a maximum 30-minute average glc of 71 ug/m³ (A162) and the 30-minute Guideline is 100 ug/m³) and usually in the range of several ug/m³. Secondly, the library of the field GC's contained in excess of 120 different organic compounds. Usually a % area identification factor for a 'normal' environmental chromatogram is in excess of 70%. Our findings downwind of Domtar resulted in % area identification factors in the range of 50

to 60%. This discrepancy is due principally to a large (initially unidentified) peak which had a retention time of approximately 20.5 minutes. GC/MS analyses of this peak confirmed it to be naphthalene but no quantitation could be undertaken due to the unavailability of a calibration standard. All that can be said is that its contribution to the overall area count in each downwind chromatogram was significant. For example, the largest peak attributed to naphthalene had an area count of 34,700 and this represented 57% of the total area count (60,870) for the entire chromatogram - @ monitoring site A182 - causing a % area identification of only 24%.

Eight GC samples were acquired upwind of Domtar during the 3 monitoring periods that were concurrent with the downwind monitoring programme. The total hydrocarbon loadings ranged from 110 to 439 ug/m³ with a mean concentration of 217 ug/m³ and a standard deviation of 101 ug/m³. The alkane fraction comprised 55% of this total (a mean of 120 ug/m³ and a standard deviation of 48 ug/m³), the aromatics 31% (a mean of 67 ug/m³ and a standard deviation of 48 ug/m³) and the chlorinated fraction 6% (a mean of 13 ug/m³ and standard deviation of 18 ug/m³). The BTX contribution only accounted for 19% of the total with mean loadings of 12, 13 and 16 ug/m³ respectively. Now the average % area identification was greater than 72% and was thus more aligned to a 'normal' environment. Naphthalene was present as roughly 5% of the total area count upwind, but that represented only 1-2% of the naphthalene levels (as area counts) downwind.

Upwind of Domtar, the alkane fraction accounted for 55% of the total hydrocarbon loadings whereas downwind, it was only 23%; but the absolute concentrations were essentially the same - 161 versus 120 ug/m³. This inferred that a general, universal alkane background was present in the Hamilton area and that the more plausible source(s) would be of a high temperature origin - the steel works (blast furnaces, etc.) or the internal combustion machine (vehicular traffic). For the correlation data presented for the common contaminants, NO_x, TH-M and CO were positively correlated for the upwind data. This again give credence to this high temperature upwind source(s) hypothesis. For the downwind sampling, no NO_x correlation with any of the common contaminants (all negative coefficients) was evident. Thus for these samples, 'cold' source(s) were deemed probable - i.e. the holding tanks of Domtar.

**INVESTIGATION OF EMISSIONS IN THE VICINITY OF
DOMTAR, HAMILTON**

Monitoring Period	Start Time	Duration	Location and Description
A162	10/16/10:56	2.4 hrs.	Strathearne, downwind
A182	10/18/12:38	2.4 hrs.	Strathearne, downwind
B182	10/18/12:32	3.3 hrs.	Stelco #2 mill, upwind
B232	10/23/14:30	1.0 hrs.	Stelco #2 mill, downwind
A243	10/24/14:14	1.8 hrs.	Stelco #2 mill, upwind
B241	10/24/14:02	2.5 hrs.	Strathearne, downwind
A062	11/06/12:45	1.5 hrs.	Stelco #2 mill, upwind
B061	11/06/11:30	3.0 hrs.	Strathearne, downwind
A063	11/06/14:30	0.5 hrs.	Strathearne, downwind

HAMILTON - 85 (DOMTAR)
COMMON CONTAMINANTS - ppm

- Downwind Measurements -

Maximum 30-minute average ground level concentrations

Monitoring Periods	TRS	SO ₂	TH-M	CO	NO _x
A162	0.035	-	3.02	4.50	0.13
A182	0.040	-	3.44	1.31	0.09
B232	0.002	0.01	0.75	0.81	0.11
B241	0.025	0.02	1.40	1.29	0.15
B061	0.100	0.04	4.28	5.37	0.10
A063	0.039	-	2.10	1.38	0.15

Overall mean concentrations

Monitoring Periods	TRS	SO ₂	TH-M	CO	NO _x
A162	0.023	-	1.91	2.38	0.10
A182	0.026	-	2.52	1.10	0.07
B232	0.001	0.01	0.70	0.68	0.10
B241	0.014	0.01	1.24	1.12	0.12
B061	0.045	0.02	2.77	4.21	0.07
A063	0.039	-	2.10	1.32	0.15
Average of the means	0.025	0.01	1.87	1.80	0.10

- Upwind Measurements -

Maximum 30-minute average (and M.P.* mean) glc's

Monitoring Periods	TRS	SO ₂	TH-M	CO	NO _x
B182	0.002(0.001)	0.02(0.01)	0.56(0.48)	1.49(1.20)	0.07(0.04)
A243	0.002(0.001)	-	0.90(0.81)	1.65(1.29)	0.11(0.10)
A062	0.003(0.002)	-	1.62(1.36)	4.66(2.77)	0.11(0.10)
Average of the means	(0.001)	(0.01)	(0.88)	(1.75)	(0.08)

* M.P. = monitoring period

HAMILTON - 85 (DOMTAR)
GAS CHROMATOGRAPHIC ANALYSES - ug/m³

Monitoring Period	Sample #	Sample Duration	Total HC Loading	Alkane Loading	Aromatic Loading	Chlorinated HC's Total	Benzene Loading	Toluene Loading	Xylenes Loading	Area % Identified Peaks
- Downwind Sample Analyses -										
A162	1	30 min.	127	16	108	1	36	14	15	52
	2	30 min.	1058	288	678	34	227	114	103	61
	3	30 min.	779	155	593	5	330	123	63	65
	4	30 min.	465	88	361	3	151	65	44	52
A182	1	30 min.	472	50	414	7	157	100	73	35
	2	30 min.	503	39	455	3	173	115	96	24
	3	30 min.	378	68	293	8	76	56	46	26
	4	30 min.	300	56	227	9	73	46	39	28
A232	1	30 min.	452	222	196	6	77	56	32	86
A241	1	30 min.	750	205	471	50	129	107	78	65
	2	30 min.	560	143	361	41	102	79	59	66
	3	30 min.	746	167	500	58	144	114	79	66
B061	1	30 min.	923	279	545	57	122	105	86	68
	2	30 min.	901	264	579	23	112	93	81	68
	3	30 min.	1650	311	1170	120	191	150	164	68
	4	30 min.	1209	239	850	87	207	149	120	63
A063	1	30 min.	621	142	423	32	77	72	66	43
Average Standard Deviation			700	161 (23%)	484 (69%)	32 (5%)	140	92	73	
			372	96	254	34	72	36	36	
- Upwind Sample Analyses -										
B182	1	60 min.	172	132	32	3	6	7	8	77
	2	60 min.	238	174	49	3	8	13	14	78
	3	60 min.	248	178	53	4	7	13	13	68
A243	1	30 min.	151	86	46	8	12	10	9	77
	2	30 min.	158	84	53	7	11	10	12	68
	3	30 min.	110	51	39	4	19	9	5	63
A062	1	30 min.	220	93	85	16	8	14	25	84
	2	30 min.	439	165	180	57	21	24	45	67
Average Standard Deviation			217	120 (55%)	67 (31%)	13 (6%)	12	13	16	-
			101	48	48	18	6	5	13	

HAMILTON_85 : A162

Start: 85/10/16 10:55 Scan: 60 sec
 Average: 30.00 min Report: 10.00 min
 Loc: Strathearne Avenue..in front of and downwind of Doatar

Time	CO Temp	TRS Barom	THC Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone	SolarRad
10:55-11:25	.5 10.3	.018 1023.0	1.78 15.	.77 356.	.98	.07	.03	.04	.028	.017
11:05-11:35	.4 10.7	.014 1023.2	2.08 15.	.99 353.	.97	.08	.02	.06	.034	.020
11:15-11:45	.5 10.9	.018 1023.3	2.09 13.	1.07 352.	.98	.08	.02	.06	.032	.024
11:25-11:55	1.2 11.6	.026 1023.4	2.58 10.	1.47 344.	.99	.09	.02	.07	.038	.035
11:35-12:05	3.0 12.3	.032 1023.5	3.29 8.	2.25 315.	.99	.08	.02	.07	.047	.036
11:45-12:15	3.9 12.7	.032 1023.6	3.88 8.	2.77 283.	.98	.09	.02	.08	.051	.036
11:55-12:25	4.3 12.8	.034 1023.6	4.05 10.	3.02 271.	.98	.09	.02	.08	.044	.028
12:05-12:35	3.9 12.6	.029 1023.7	3.66 8.	2.62 274.	.99	.11	.03	.09	.033	.025
12:15-12:45	4.5 12.9	.025 1023.8	3.78 8.	2.75 268.	.99	.13	.03	.10	.037	.025
12:25-12:55	3.8 12.6	.018 1023.9	3.35 8.	2.31 300.	.99	.13	.03	.10	.038	.018
12:35-13:05	3.3 12.4	.023 1024.0	3.58 12.	2.54 294.	.99	.13	.03	.10	.038	.018
12:45-13:15	2.0 11.8	.027 1024.1	2.94 15.	1.90 328.	.99	.11	.03	.08	.024	.015

HAMILTON_85 : A162

Page: 0002

Statistics	CO Temp	TRS Barom	THC Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone	SolarRad
Units	ppm d C	ppm mbar-msl	ppm km/h	ppm deg	ppm	ppm	ppm	ppm	ppm	W/cm^2
Arith. Mean	2.38 11.8	.0233 1023.6	2.938	1.988	.985	.098	.027	.074	.034	.0234
Std. Dev.	2.67 1.0	.0134 .4	1.139	1.128	.036	.034	.015	.031	.032	.0155
Geo. Mean	1.17	.0196	2.731	1.574	.984	.092	.021	.067	.023	-
Geo.Std.Dev	4.00	1.8555	1.467	1.916	1.036	1.437	2.107	1.589	2.565	-
Min Reading	.05 10.1	.0044 1022.6	1.394 .1	.377 .5	.915	.032	.005	.028	.002	.0013
Max Reading	14.02 13.9	.0748 1024.3	6.452 29.8	5.284 359.9	1.118	.190	.059	.194	.169	.0783
Min Average	.39 10.3	.0098 1023.0	1.783 7.6	.768 267.6	.974	.073	.015	.045	.024	.0154
Max Average	4.50 12.9	.0345 1024.1	4.050 15.2	3.024 355.8	.995	.131	.033	.101	.051	.0365
# Valid Rdgs	146. 146.	146. 146.	146. 146.	146. 146.	146.	146.	146.	146.	146.	146.

- Invalid Data / Not Calculated

nd Average is less than Min. Detectable Level

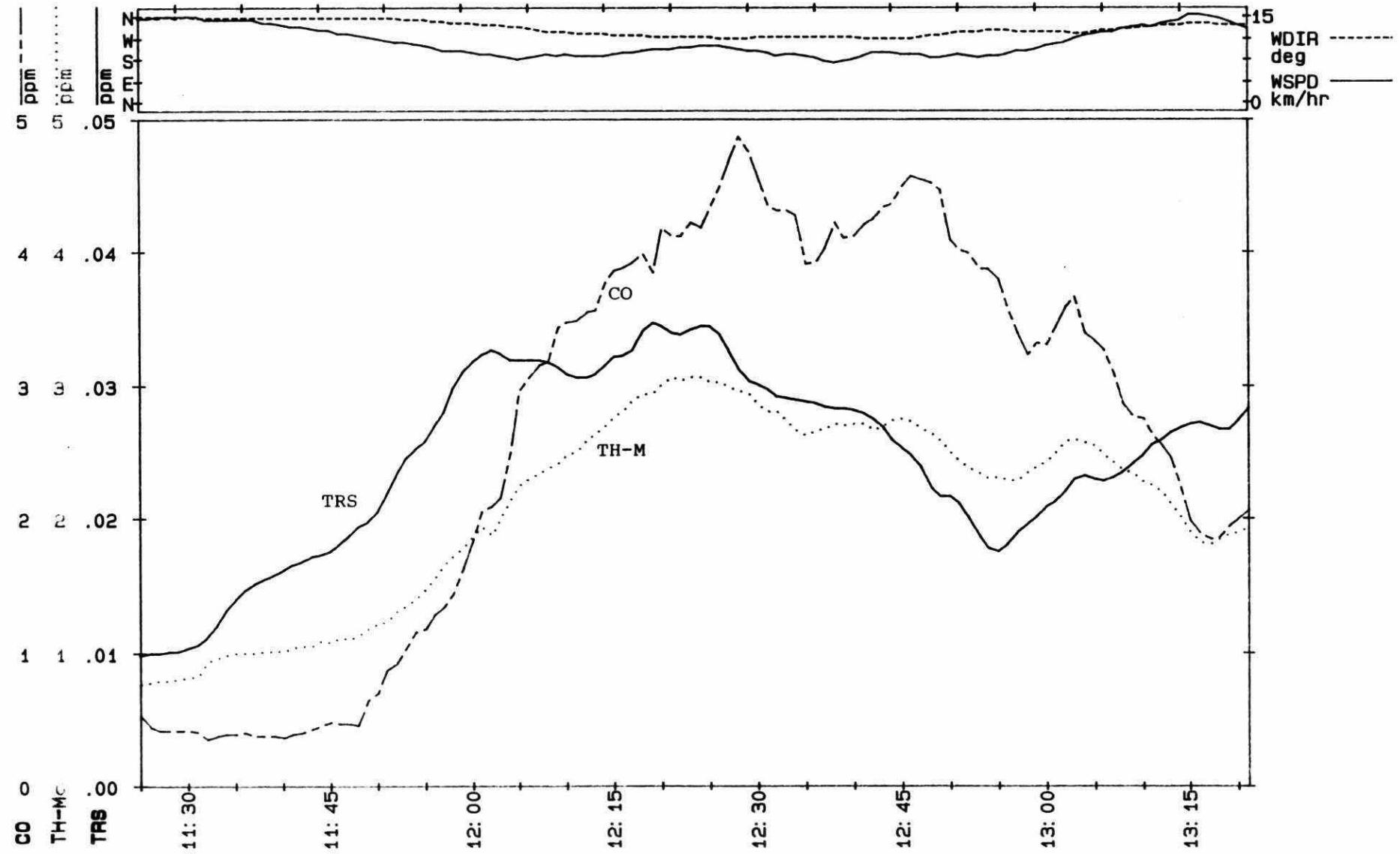
n One or more readings Missing

Percent Valid Data Required for Valid Average: 90.0 %
 Averaging Started at Nearest: .0 min

HAMILTON_85: A162

Start: 85/10/16 10:55 Scan: 60 sec. Ave: 30.00 min.
 Loc: Strathearne Avenue..in front of and downwind of Domtar

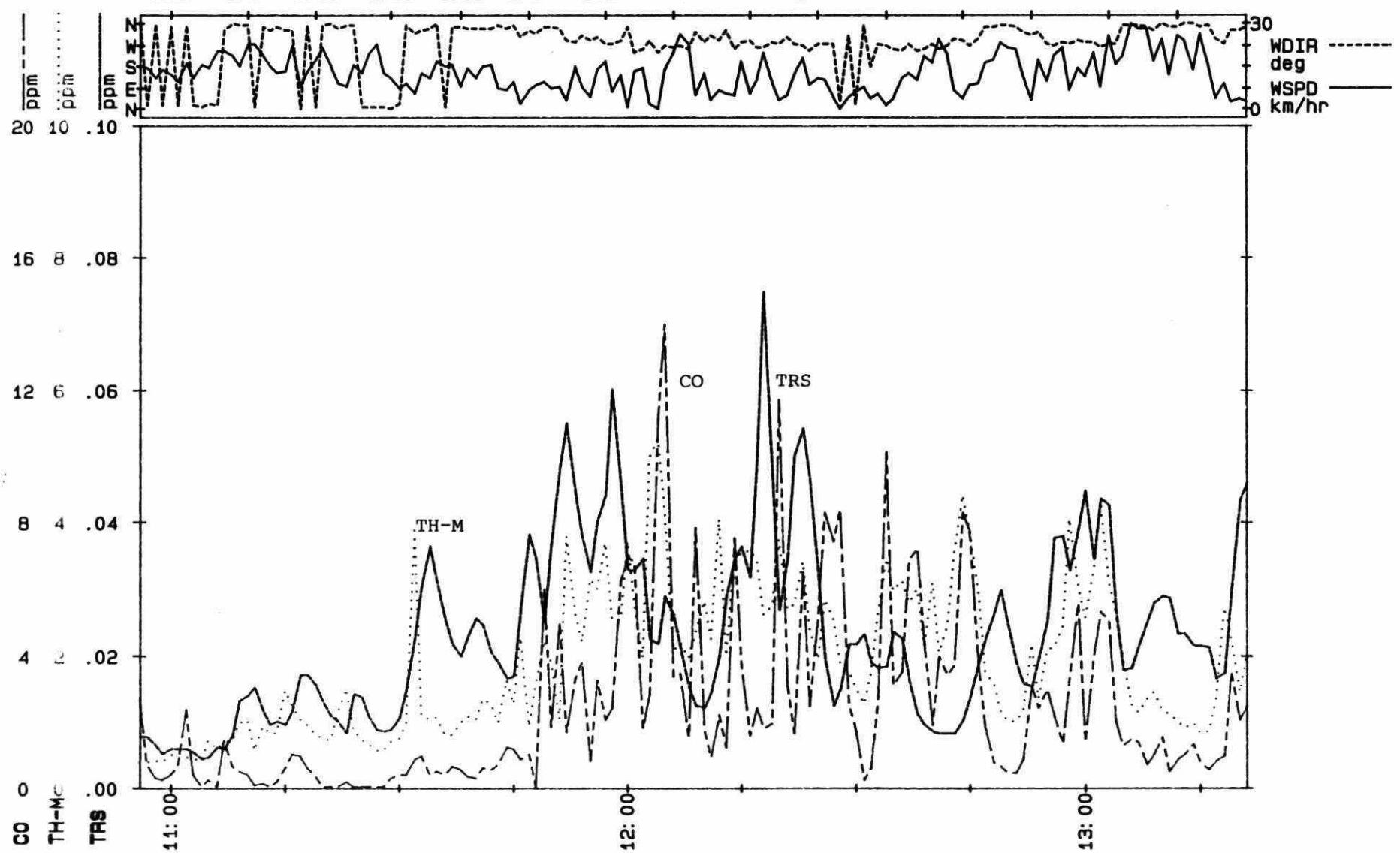
.021	.020	.023	.032	.036	.037	.036	.032	.023	.026	.025	.019	.020	.017	.015	SRAD	W/cm ²
10	11	11	11	12	12	13	13	13	13	13	13	13	12	12	TEMP	d C
86	85	84	82	78	76	74	73	73	73	72	73	76	78	84	HUM	%-rel
1023	1023	1023	1023	1024	1024	1024	1024	1024	1024	1024	1024	1024	1024	1024	BAR	mbar-msl



HAMILTON_85: A162

Start: 85/10/16 10:55 Scan: 60 sec. Ave: 1.00 min.
 Loc: Strathearne Avenue...in front of and downwind of Domtar

.007	.013	.013	.026	.029	.055	.059	.020	.026	.014	.055	.009	.013	.012	.015	SRAD	W/cm^2
10	11	10	11	11	12	13	13	12	13	13	13	12	12	11	TEMP	$^{\circ}C$
89	86	87	83	82	78	71	73	74	72	72	74	86	80	91	HUM	%-rel
1023	1023	1023	1023	1023	1024	1024	1024	1024	1024	1024	1024	1024	1024	1024	BAR	mbar-msl



HAMILTON_85 : A182

Start: 85/10/18 12:37 Scan: 60 sec
 Average: 30.00 min Report: 10.00 min
 Loc: Strathearne Avenue...in front of and downwind of Domtar

Time	CO Temp	TRS Barom	THC Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone	SolarRad
12:37-13:07	1.8 23.4	.038 *	4.89 1023.8	3.15 19.	.93 252.	.06	.02	.04	.057	.023
12:47-13:17	1.8 23.2	.038 *	4.28 1023.6	3.25 21.	.94 256.	.05	.02	.03	.053	.022
12:57-13:27	1.1 23.2	.038 *	4.39 1023.4	3.44 20.	.94 254.	.06	.02	.04	.056	.023
13:07-13:37	1.8 23.2	.040 *	4.27 1023.0	3.33 19.	.94 255.	.06	.02	.04	.054	.022
13:17-13:47	1.8 23.1	.036 *	4.04 1022.7	3.11 19.	.93 253.	.06	.02	.04	.059	.020
13:27-13:57	.9 23.1	.039 *	4.08 1022.5	3.15 19.	.93 254.	.05	.01	.04	.056	.021
13:37-14:07	1.1 23.1	.033 *	3.81 1022.2	2.83 18.	.96 249.	.08	.02	.06	.040	.022
13:47-14:17	1.3 23.1	.028	3.22 1022.0	2.21 18.	.99 240.	.09	.02	.07	.025	.022
13:57-14:27	1.3 23.0	.009	2.67 1021.7	1.65 19.	1.01 236.	.09	.03	.06	.025	.020
14:07-14:37	1.3 23.1	.006	2.52 1021.6	1.51 21.	.99 237.	.07	.03	.04	.031	.020
14:17-14:47	1.2 23.3	.005	2.56 1021.3	1.56 22.	.99 238.	.07	.03	.04	.034	.024
14:27-14:57	1.2 23.5	.007	2.61 1021.0	1.61 22.	.99 238.	.07	.02	.04	.036	.024

Statistics	CO Temp	TRS Barom	THC Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone	SolarRad
Units	ppm d C	ppm mbar-msl	ppm km/h	ppm deg	ppm	ppm	ppm	ppm	ppm	W/cm ⁻²
Arith. Mean	1.10 23.3	.0255 1022.4	3.488 -	2.517 -	.960	.066	.022	.046	.044	.0223
Std. Dev.	.25 .4	.0199 1.1	.916 -	.948 -	.036	.023	.012	.020	.040	.0049
Geo. Mean	1.08 -	.0160 -	3.363 -	2.322 -	.960	.063	.019	.042	.025	-
Geo.Std.Dev	1.22 -	3.0186 -	1.317 -	1.520 -	1.038	1.400	1.918	1.449	3.187	-
Min Reading	.78 21.5	.0010 1019.6	2.002 8.8	.967 218.0	.908	.025	.005	.023	.002	.0156
Max Reading	2.55 24.0	.0856 1024.0	5.442 30.3	4.500 278.7	1.089	.136	.057	.127	.173	.0429
Min Average	.94 23.0	.0053 1021.0	2.521 17.7	1.514 236.1	.929	.049	.012	.034	.025	.0202
Max Average	1.31 23.5	.0395 1023.0	4.394 21.6	3.442 255.7	1.006	.092	.031	.066	.059	.0244
# Valid Rdgs	143. 143.	143. 143.	143. 143.	143. 143.	143.	143.	143.	143.	143.	143.
Min.Det.Lev	.10 -	.0020 950.0	.100 -	.100 -	.100	.010	.010	.010	.004	-
1/2hr Std	5.20 -	.0270 -	- -	- -	-	.270	-	-	.100	-

- Invalid Data / Not Calculated

nd Average is less than Min. Detectable Level

m One or more readings Missing

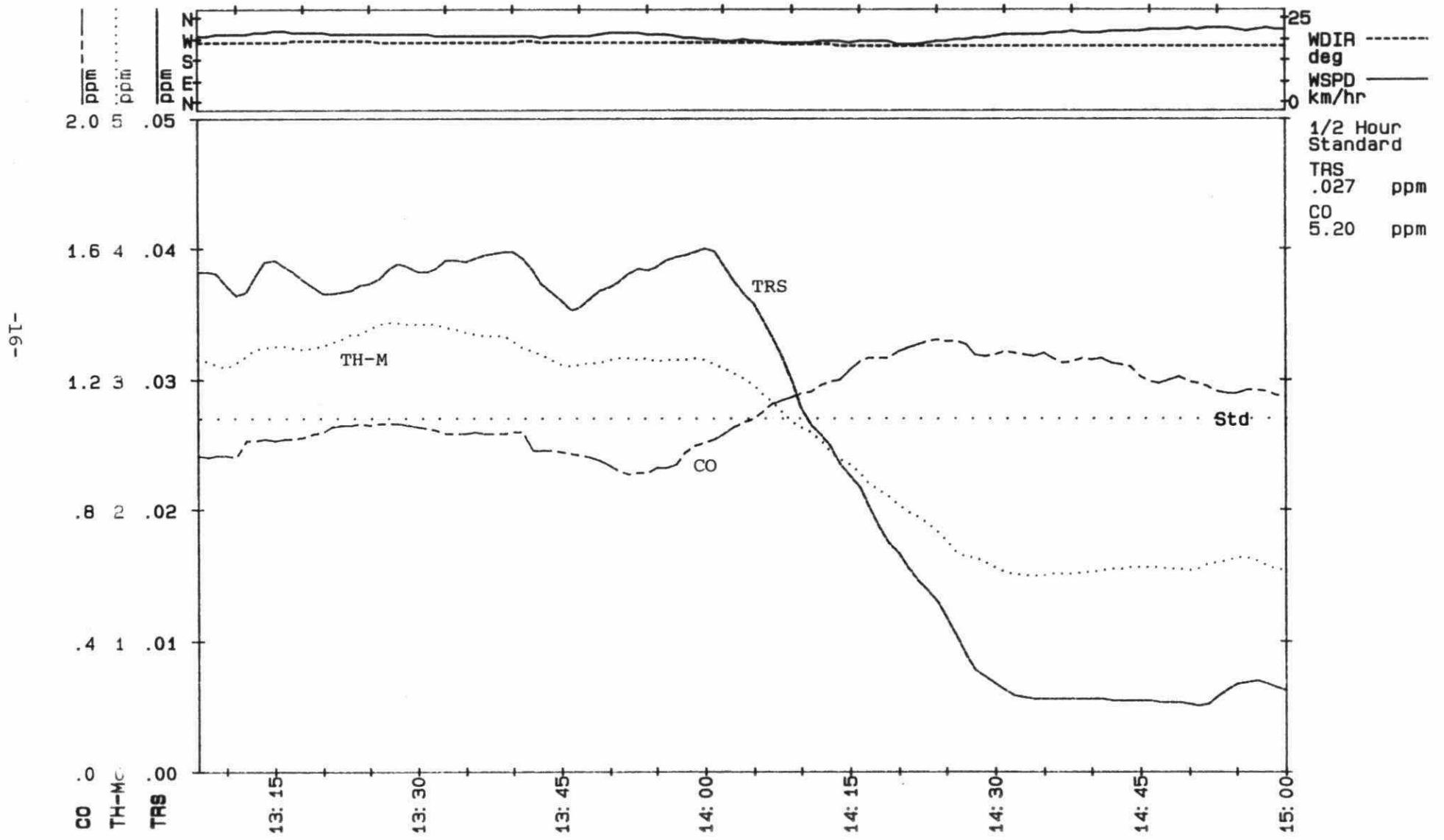
t Average is above Provincial Std/Criteria

Percent Valid Data Required for Valid Average: 90.0 %
 Averaging Started at Nearest: .0 min

HAMILTON_85: A182

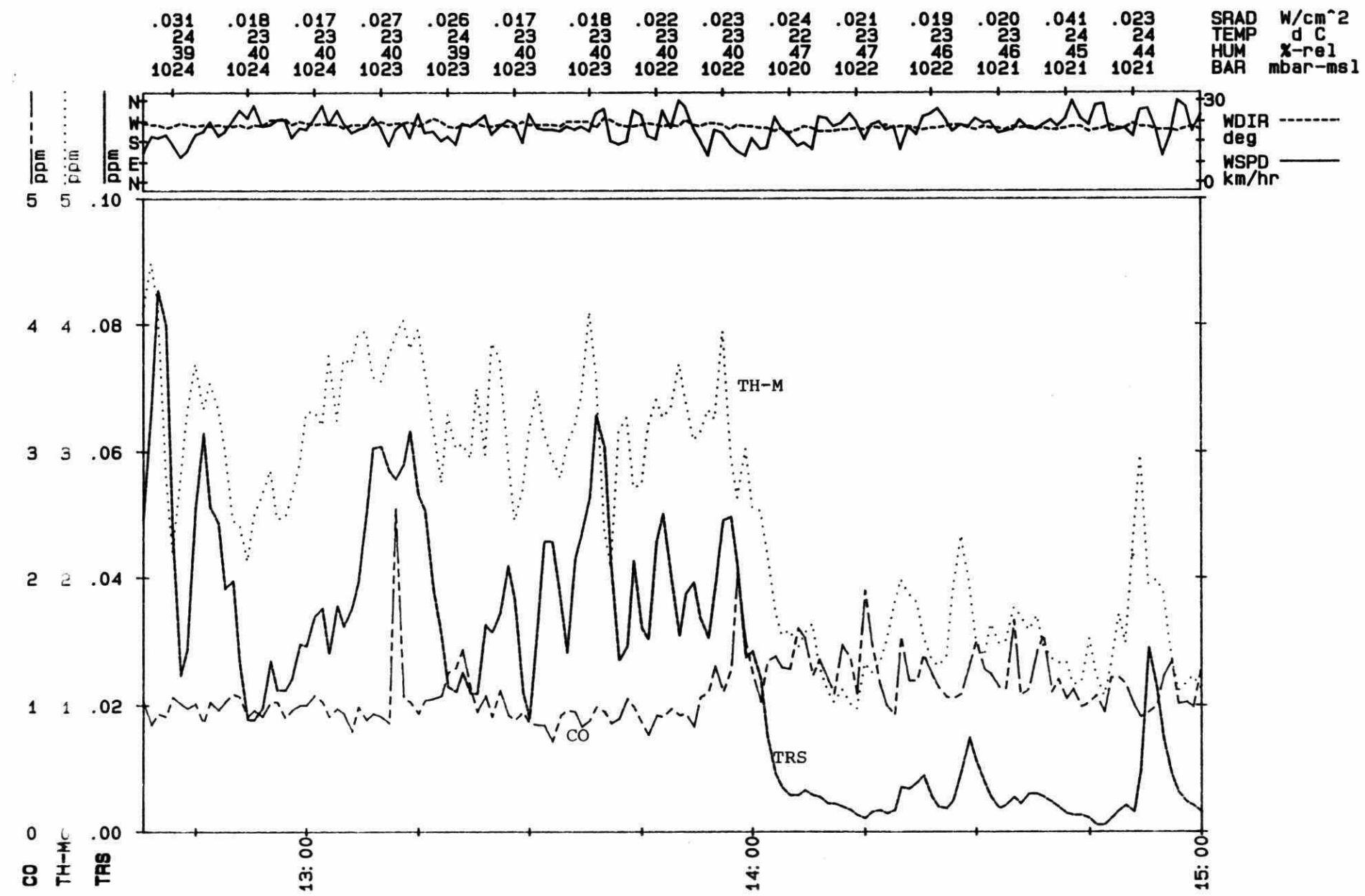
Start: 85/10/18 12:37 Scan: 60 sec. Ave: 30.00 min.
 Loc: Strathearne Avenue...in front of and downwind of Domtar

.022	.022	.023	.023	.021	.020	.020	.021	.022	.022	.021	.020	.020	.023	.025	SRAD W/cm ²
.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	.23	TEMP d C
40	40	40	40	40	40	40	40	41	43	45	46	46	46	45	HUM %-rel
1024	1024	1023	1023	1023	1023	1023	1022	1022	1022	1022	1022	1022	1021	1021	BAR mbar-msl



HAMILTON_85: A182

Start: 85/10/18 12:37 Scan: 60 sec. Ave: 1.00 min.
 Loc: Strathearne Avenue...in front of and downwind of Domtar



HAMILTON_85 : B1B2

Start: 85/10/18 12:31 Scan: 60 sec
 Average: 30.00 min Report: 10.00 min
 Loc: Stelco #2 Rod Mill...500m upwind of Domtar..TRS

Time	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
12:31-13:01	- .031	nd 21.8	1.83 1023.8	.02 20.	.40 223.	1.31	.03	.02	nd	.009
12:41-13:11	- .028	nd 21.8	1.85 1023.7	.02 20.	.43 221.	1.31	.03	.02	nd	.008
12:51-13:21	- .027	nd 21.7	1.83 1023.6	.02 22.	.43 221.	1.30	.03	.01	.01	.009
13:01-13:31	1.8 .028	nd 21.7	1.84 1023.4	.02 22.	.44 219.	1.30	.02	nd	.01	.009
13:11-13:41	1.8 .027	nd 21.7	1.85 1023.2	.02 22.	.44 219.	1.31	.02	nd	nd	.009
13:21-13:51	.9 .025	nd 21.8	1.85 1023.1	.01 22.	.43 218.	1.32	.03	.01	nd	.012
13:31-14:01	- .026	- 21.8	1.89 1023.1	nd 21.	.43 220.	1.34	.03	.02	nd	.012
13:41-14:11	- .028	- 22.0	1.97 1023.1	nd 17.	.48 217.	1.37	.04	.02	.01	.013
13:51-14:21	- .027	- 22.2	2.03 1023.0	nd 15.	.51 210.	1.40	.04	.02	.01	.008
14:01-14:31	- .026	- 22.3	2.04 1022.8	nd 15.	.53 205.	1.41	.05	.02	.02	.006
14:11-14:41	1.3 .025	- 22.4	2.01 1022.6	nd 18.	.51 202.	1.40	.04	.02	.02	.005
14:21-14:51	1.3 .029	nd 22.5	2.00 1022.4	nd 18.	.51 204.	1.39	.04	.02	.02	.008
14:31-15:01	1.3 .030	nd 22.6	1.98 1022.2	nd 18.	.51 203.	1.37	.04	.02	.01	.012
14:41-15:11	1.4 .027	nd 22.5	1.98 1022.0	nd 18.	.52 203.	1.36	.05	.02	.02	.014
14:51-15:21	1.4 .019	nd 22.2	1.95 1021.8	nd 18.	.53 201.	1.33	.05	.03	.02	.014
15:01-15:31	1.3 .015	nd 21.7	1.95 1021.7	nd 17.	.54 202.	1.33	.06	.03	.02	.013

Time	CO SolarRad	TRS Temp	THC Barom	S02 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
15:11-15:41	1.5 .013	nd 21.2	1.97 1021.6	nd 18.	.56 200.	1.33	.06	.03	.02	.012

Statistics	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
Units	ppm W/cm^2	ppm d C	ppm mbar-msl	ppm km/h	ppm deg	ppm	ppm	ppm	ppm	ppm
Arith. Mean	1.28 .0247	.0013 21.9	1.930 1022.7	.010 -	.484 -	1.343	.041	.021	.013	.010
Std. Dev.	.32 .0080	.0008 .5	.116 .8	.006 -	.085 -	.043	.017	.009	.008	.006
Geo. Mean	1.16 -	.0012 -	1.927 -	.008 -	.477 -	1.342	.037	.019	.011	.008
Geo.Std.Dev	1.28 -	1.5009 -	1.061 -	1.778 -	1.195 -	1.032	1.665	1.724	1.871	2.134
Min Reading	.54 .0089	.0010 20.5	1.702 1021.4	.005 8.0	.310 175.0	1.250	.005	.005	.005	.002
Max Reading	2.64 .0495	.0051 22.9	2.360 1024.2	.019 32.4	.767 239.1	1.462	.095	.045	.040	.034
Min Average	.94 .0129	.0010 21.2	1.828 1021.6	.005 15.1	.403 200.3	1.299	.020	.008	.007	.005
Max Average	1.49 .0314	.0019 22.6	2.042 1023.8	.018 21.7	.558 223.3	1.410	.065	.034	.019	.014
# Valid Rdgs	185. 197.	171. 197.	197. 197.	197. 197.	197. 197.	197.	197.	197.	197.	197.
Min.Det.Lev	.10 -	.0020 -	.100 950.0	.010 -	.100 -	.100	.010	.010	.010	.004
1/2hr Std	5.20 -	.0270 -	- -	.300 -	- -	-	.270	-	-	.100

- Invalid Data / Not Calculated

nd Average is less than Min. Detectable Level

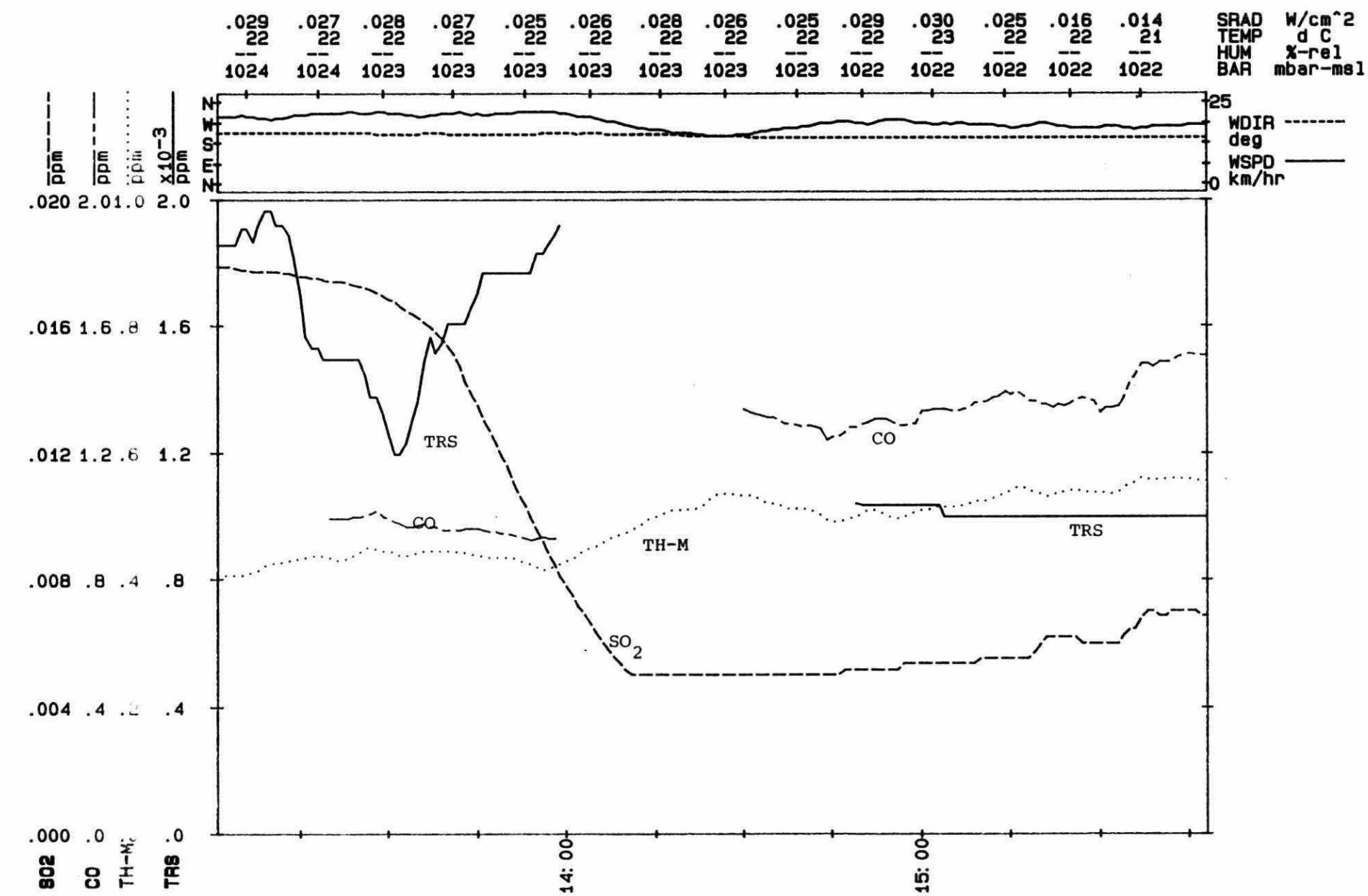
m One or more readings Missing

+ Average is above Provincial Std/Criteria

Percent Valid Data Required for Valid Average: 90.0 %
 Averaging Started at Nearest: .0 min

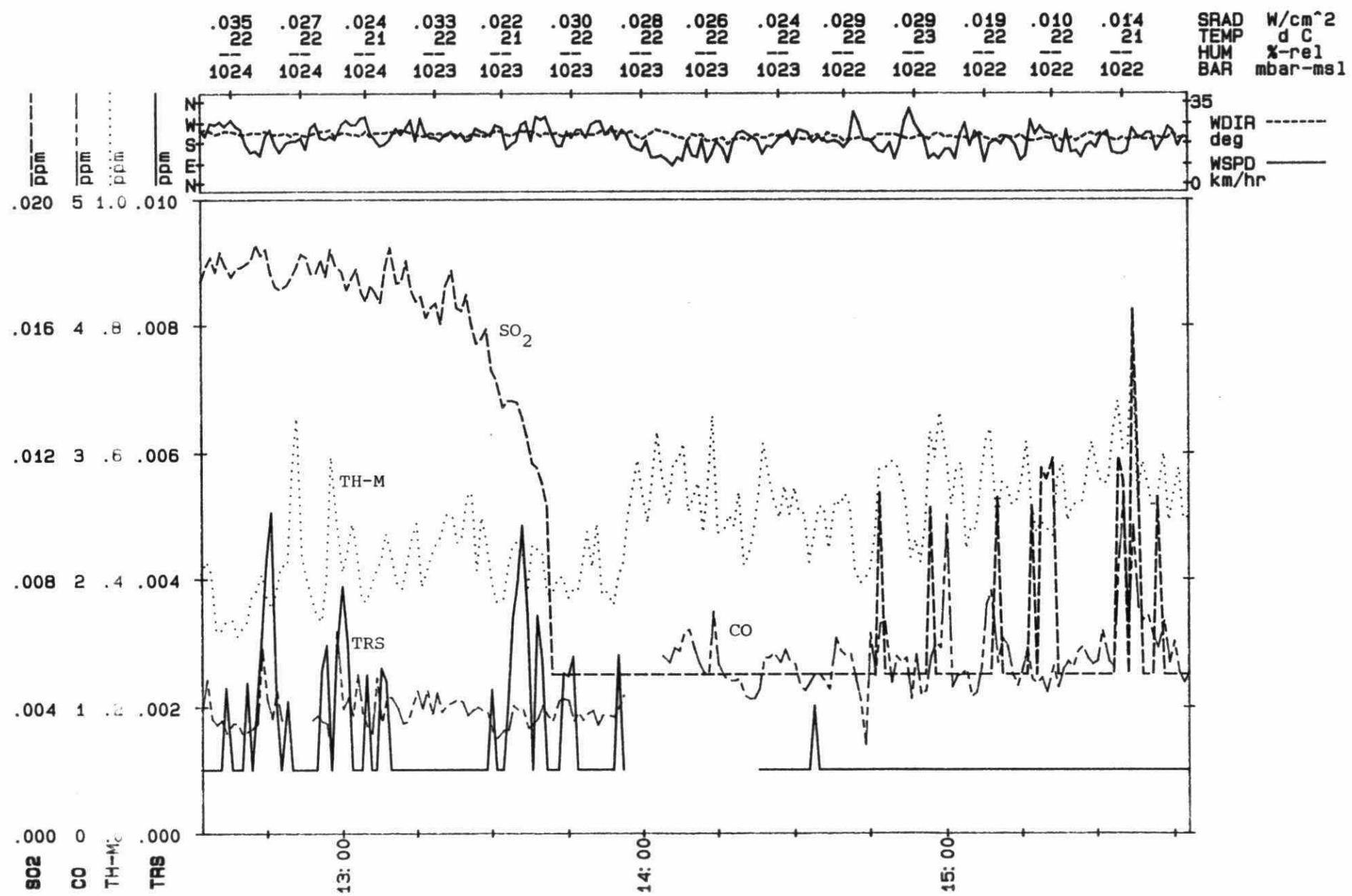
HAMILTON_85: B182

Start: 85/10/18 12:31 Scan: 60 sec. Ave: 30.00 min.
 Loc: Stelco #2 Rod Mill...500m upwind of Domtar...TRS



HAMILTON_85: B182

Start: 85/10/18 12:31 Scan: 60 sec. Ave: 1.00 min.
 Loc: Stelco #2 Rod Mill...500m upwind of Domtar..TRS



HAMILTON_85 : B232

Start: 85/10/23 14:29 Scan: 60 sec
 Average: 30.00 min Report: 10.00 min
 Loc: Stelco #2 Rod Mill...downwind of Domtar....TRS

Time	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
14:29-14:59	.8 .032	nd 16.3	2.08 1021.1	nd 11.	.66 68.	1.41	.11	.06	.04	.013
14:39-15:09	.8 .035	nd 16.5	2.08 1020.9	nd 11.	.57 78.	1.43	.11	.06	.04	.013
14:49-15:19	.8 .040	nd 16.8	2.09 1020.8	nd 10.	.67 78.	1.42	.11	.06	.04	.010
14:59-15:29	.6 .043	nd 17.1	2.14 1020.6	nd 10.	.75 78.	1.39	.10	.05	.03	.008

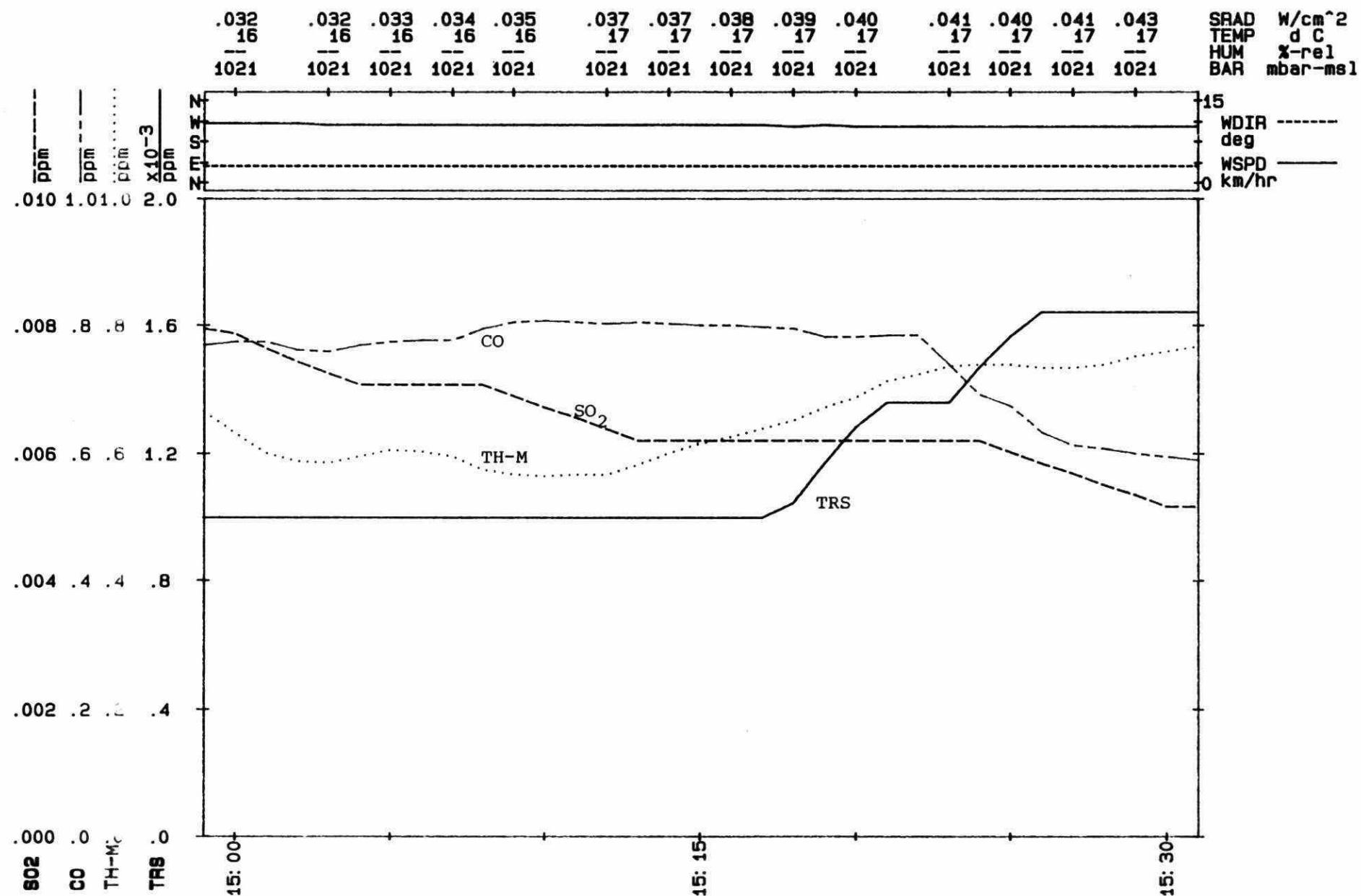
Statistics	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
Units	ppm W/cm^2	ppm d C	ppm mbar-msl	ppm km/h	ppm deg	ppm	ppm	ppm	ppm	ppm
Arith. Mean	.68 .8375	.0013 16.7	2.186 1020.8	.007 -	.782 -	1.398	.103	.057	.031	.011
Std. Dev.	.38 .0134	.0009 .5	.286 .3	.003 -	.294 -	.048	.015	.007	.011	.005
Geo. Mean	.64 -	.0012 -	2.088 -	.006 -	.646 -	1.397	.102	.056	.029	.009
Geo.Std.Dev	1.37 -	1.5252 -	1.140 -	1.404 -	1.510 -	1.035	1.152	1.127	1.530	1.742
Min Reading	.42 .0139	.0010 16.0	1.684 1020.3	.005 7.6	.259 55.0	1.293	.078	.041	.005	.002
Max Reading	1.89 .8685	.0048 17.4	2.877 1021.2	.012 13.2	1.513 82.8	1.473	.142	.073	.053	.026
Min Average	.60 .0317	.0010 16.3	2.005 1020.6	.005 10.1	.567 68.4	1.386	.097	.054	.029	.008
Max Average	.81 .0427	.0016 17.1	2.143 1021.1	.008 10.9	.752 70.2	1.431	.111	.060	.038	.013
# Valid Rds	62. 62.	62. 62.	62. 62.	62. 62.	62. 62.	62.	62.	62.	62.	62.
Min.Det.Lev	.10 -	.0020 -	.100 950.0	.010 -	.100 -	.100	.010	.010	.010	.004
1/2hr Std	5.20 -	.0270 -	- -	.300 -	- -	-	.270	-	-	.100

- Invalid Data / Not Calculated
 nd Average is less than Min. Detectable Level
 m One or more readings Missing
 + Average is above Provincial Std/Criteria

Percent Valid Data Required for Valid Average: 90.0 %
 Averaging Started at Nearest: .0 min

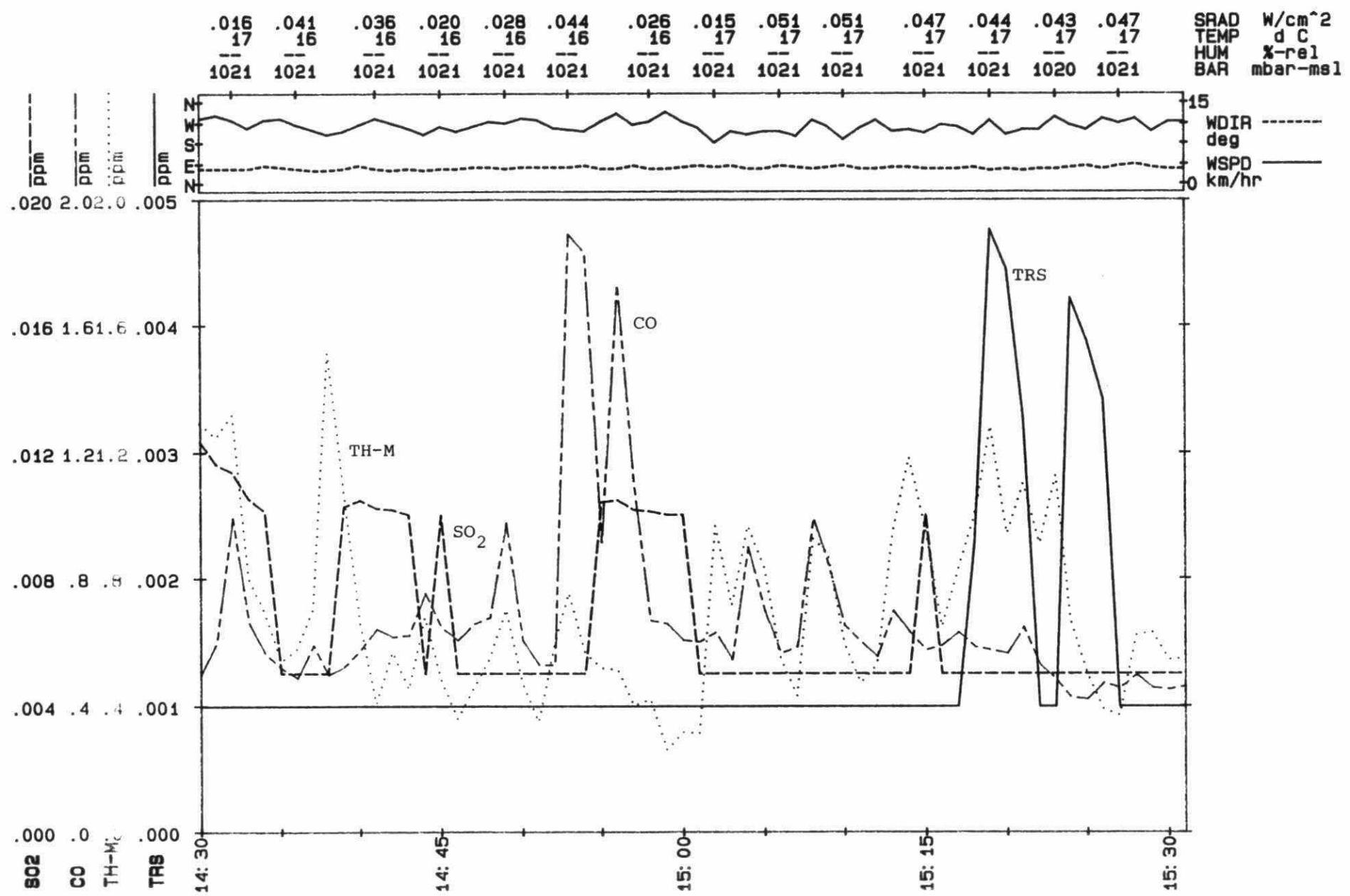
HAMILTON_85: B232

Start: 85/10/23 14: 29 Scan: 60 sec. Ave: 30.00 min.
 Loc: Stelco #2 Rod Mill...downwind of Domtar....TRS



HAMILTON_85: B232

Start: 85/10/23 14:29 Scan: 60 sec. Ave: 1.00 min.
 Loc: Stelco #2 Rod Mill...downwind of Domtar....TRS



HAMILTON_85 : A243

Start: 85/10/24 14:13 Scan: 60 sec
 Average: 30.00 min Report: 10.00 min
 Loc: Steico #2 Steelrod Mill...upwind of Domtar

Time	CO Temp	TRS Barom	THC Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone	SolarRad
14:13-14:43	1.8 20.0	nd 1010.6	1.69 30.	.78 235.	.98	.10	.07	.03	nd	.007
14:23-14:53	1.2 19.5	nd 1010.5	1.81 28.	.81 232.	.99	.10	.06	.04	nd	.005
14:33-15:03	1.3 19.2	nd 1010.4	1.88 28.	.86 233.	1.01	.10	.06	.04	nd	.007
14:43-15:13	1.3 19.1	nd 1010.3	1.89 29.	.86 236.	1.02	.10	.06	.04	nd	.010
14:53-15:23	1.3 19.4	nd 1010.1	1.86 28.	.84 238.	1.01	.09	.05	.04	nd	.014
15:03-15:33	1.4 19.7	nd 1010.0	1.88 26.	.86 241.	1.00	.09	.05	.05	nd	.014
15:13-15:43	1.4 19.9	.002 1009.5	1.91 24.	.89 237.	1.01	.10	.05	.05	nd	.014
15:23-15:53	1.6 19.8	nd 1009.1	1.93 26.	.90 237.	1.01	.10	.05	.06	nd	.010

Statistics	CO Temp	TRS Barom	THC Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone	SolarRad
Units	ppm d C	ppm abars-msl	ppm km/h	ppm deg	ppm	ppm	ppm	ppm	ppm	W/cm ⁻²
Arith. Mean	1.29 19.6	.0014 1009.8	1.825	.814	1.002	.098	.057	.043	.002	.0092
Std. Dev.	.82 .5	.0012 1.7	.154	.135	.020	.013	.011	.014	.001	.0053
Geo. Mean	1.17 -	.0012 -	1.819	.803	1.001	.097	.055	.042	.002	-
Geo.Std.Dev	1.47 -	1.5560 -	1.088	1.184	1.021	1.142	1.223	1.329	1.187	-
Min Reading	.76 18.3	.0010 998.5	1.478 12.3	.513 205.7	.961	.066	.029	.024	.002	.0020
Max Reading	7.37 20.7	.0100 1010.9	2.295 43.1	1.245 252.5	1.055	.141	.089	.102	.006	.0254
Min Average	1.00 19.1	.0010 1009.1	1.689 23.6	.785 232.5	.981	.093	.049	.035	.002	.0046
Max Average	1.65 20.8	.0021 1010.6	1.930 38.3	.984 240.7	1.016	.105	.066	.056	.002	.0139
# Valid Rdgs	107. 107.	107. 107.	107. 107.	107. 107.	107.	107.	107.	107.	107.	107.

- Invalid Data / Not Calculated

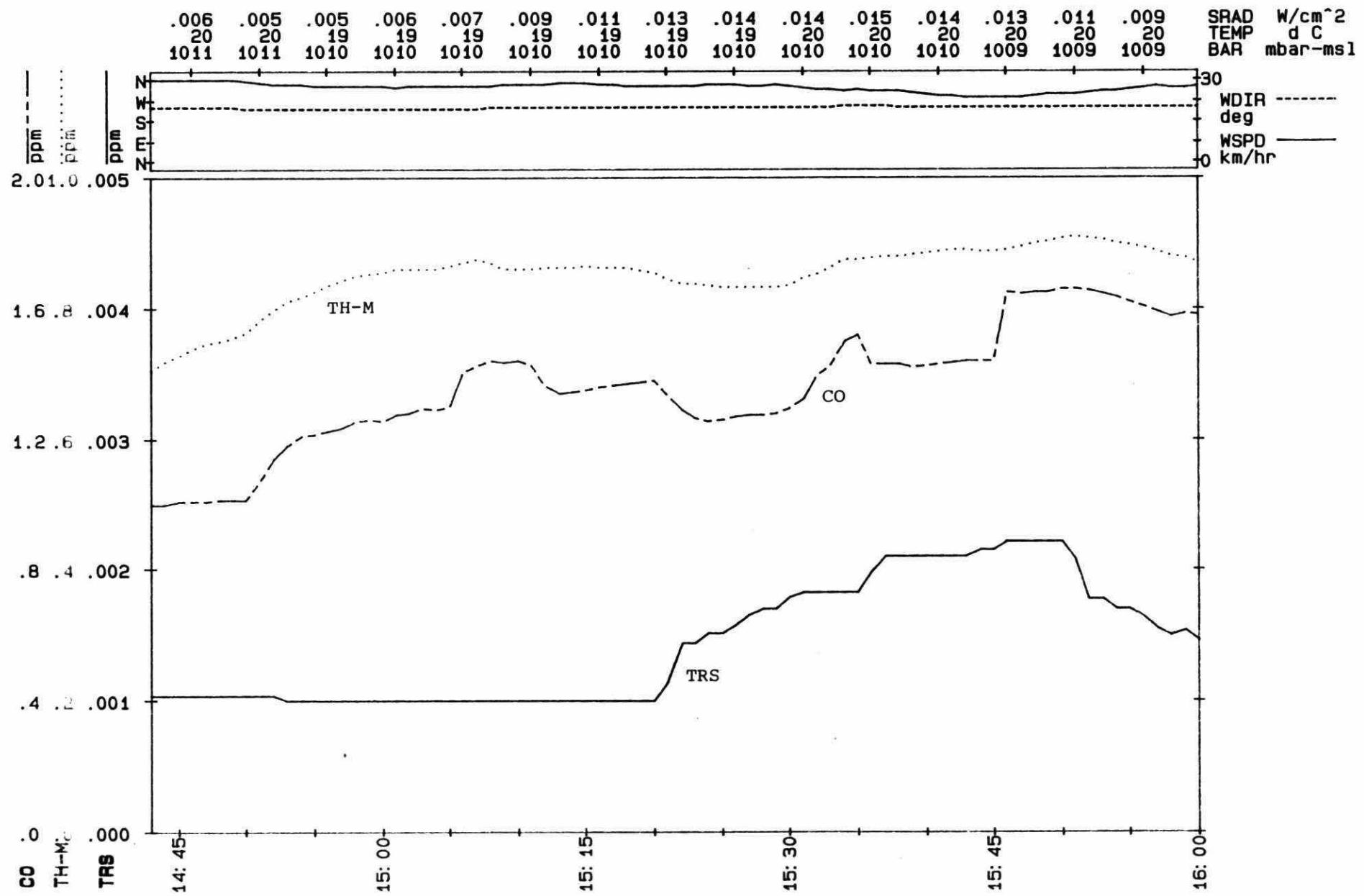
nd Average is less than Min. Detectable Level

m One or more readings Missing

Percent Valid Data Required for Valid Average: 90.0 %
 Averaging Started at Nearest: .0 min

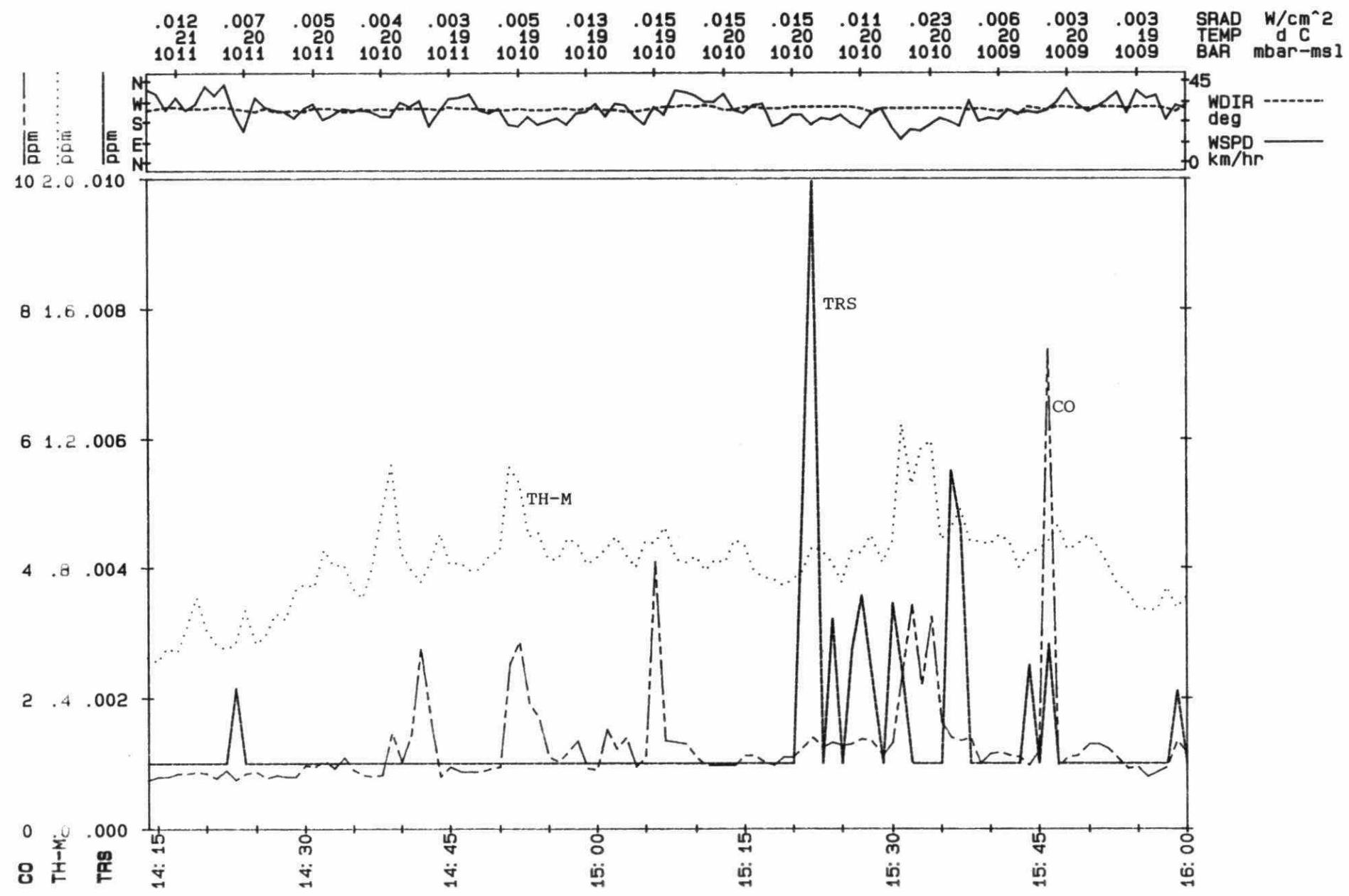
HAMILTON_85: A243

Start: 85/10/24 14:13 Scan: 60 sec. Ave: 30.00 min.
 Loc: Stelco #2 Steelrod Mill...upwind of Domtar



HAMILTON_85: A243

Start: 85/10/24 14:13 Scan: 60 sec. Ave: 1.00 min.
 Loc: Stelco #2 Steelrod Mill...upwind of Domtar



HAMILTON_85 : B241

Start: 85/10/24 14:01 Scan: 60 sec
 Average: 30.00 min Report: 10.00 min
 Loc: North end of Strathearne Avenue...downwind of Domtar...TRS

Time	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
14:01-14:31	1.1 .021	.012 20.6	2.63 1010.6	.02 18.	1.34 201.	1.29	.11	.06	.04	.038
14:11-14:41	.9 .012	.012 20.4	2.56 1010.5	.02 17.	1.29 202.	1.27	.10	.05	.04	.021
14:21-14:51	.9 .007	.011 20.0	2.61 1010.6	.02 17.	1.34 201.	1.27	.12	.06	.05	.019
14:31-15:01	.9 .007	.009 19.6	2.52 1010.7	.02 17.	1.21 200.	1.30	.13	.07	.05	.014
14:41-15:11	1.0 .010	.008 19.4	2.49 1010.9	.01 18.	1.16 200.	1.32	.13	.07	.05	.017
14:51-15:21	1.0 .015	.011 19.3	2.34 1010.8	nd 19.	1.02 205.	1.32	.10	.06	.03	.019
15:01-15:31	1.0 .016	.015 19.5	2.46 1010.7	nd 18.	1.15 207.	1.31	.09	.05	.03	.023
15:11-15:41	1.1 .017	.016 19.7	2.50 1010.5	nd 16.	1.19 207.	1.31	.10	.05	.04	.020
15:21-15:51	1.2 .014	.012 19.7	2.55 1010.3	nd 15.	1.23 199.	1.32	.13	.06	.05	.019
15:31-16:01	1.2 .011	.012 19.6	2.57 1010.2	nd 15.	1.26 200.	1.31	.14	.07	.07	.018
15:41-16:11	1.3 .006	.018 19.3	2.69 1010.1	nd 16.	1.40 206.	1.29	.14	.07	.07	.025
15:51-16:21	1.3 .005	.025 18.9	2.65 1010.2	nd 16.	1.39 211.	1.26	.12	.06	.05	.024

Statistics	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
Units	ppm W/cm^2	ppm d C	ppm mbar-msl	ppm km/h	ppm deg	ppm	ppm	ppm	ppm	ppm
Arith. Mean	1.12 .0121	.0142 19.6	2.538 1010.5	.011 -	1.241 -	1.296	.116	.059	.045	.021
Std. Dev.	.41 .0087	.0083 .6	.313 .3	.007 -	.321 -	.036	.033	.018	.026	.014
Geo. Mean	1.07 -	.0116 -	2.518 -	.009 -	1.197 -	1.295	.112	.058	.039	.016
Geo.Std.Dev	1.33 -	2.0212 -	1.133 -	1.917 -	1.319 -	1.028	1.294	1.182	1.681	2.413
Min Reading	.58 .0021	.0018 18.4	1.928 1009.8	.005 8.6	.495 181.8	1.234	.078	.044	.014	.002
Max Reading	4.06 .0466	.0351 21.1	3.322 1011.1	.024 27.0	2.069 229.0	1.415	.243	.098	.142	.071
Min Average	.92 .0051	.0078 18.9	2.342 1010.1	.005 14.9	1.015 199.2	1.264	.094	.053	.027	.014
Max Average	1.29 .0212	.0245 20.6	2.688 1010.9	.021 18.7	1.400 210.5	1.325	.145	.067	.067	.030
% Valid Rdgs	148. 148.	148. 148.	148. 148.	148. 148.	148. 148.	148.	148.	148.	148.	148.
Min.Det.Lev	.10 -	.0020 -	.100 950.0	.010 -	.100 -	.100	.010	.010	.010	.004
1/2hr Std	5.20 -	.0270 -	- -	.300 -	- -	-	.270 -	-	-	.100

- Invalid Data / Not Calculated

nd Average is less than Min. Detectable Level

m One or more readings Missing

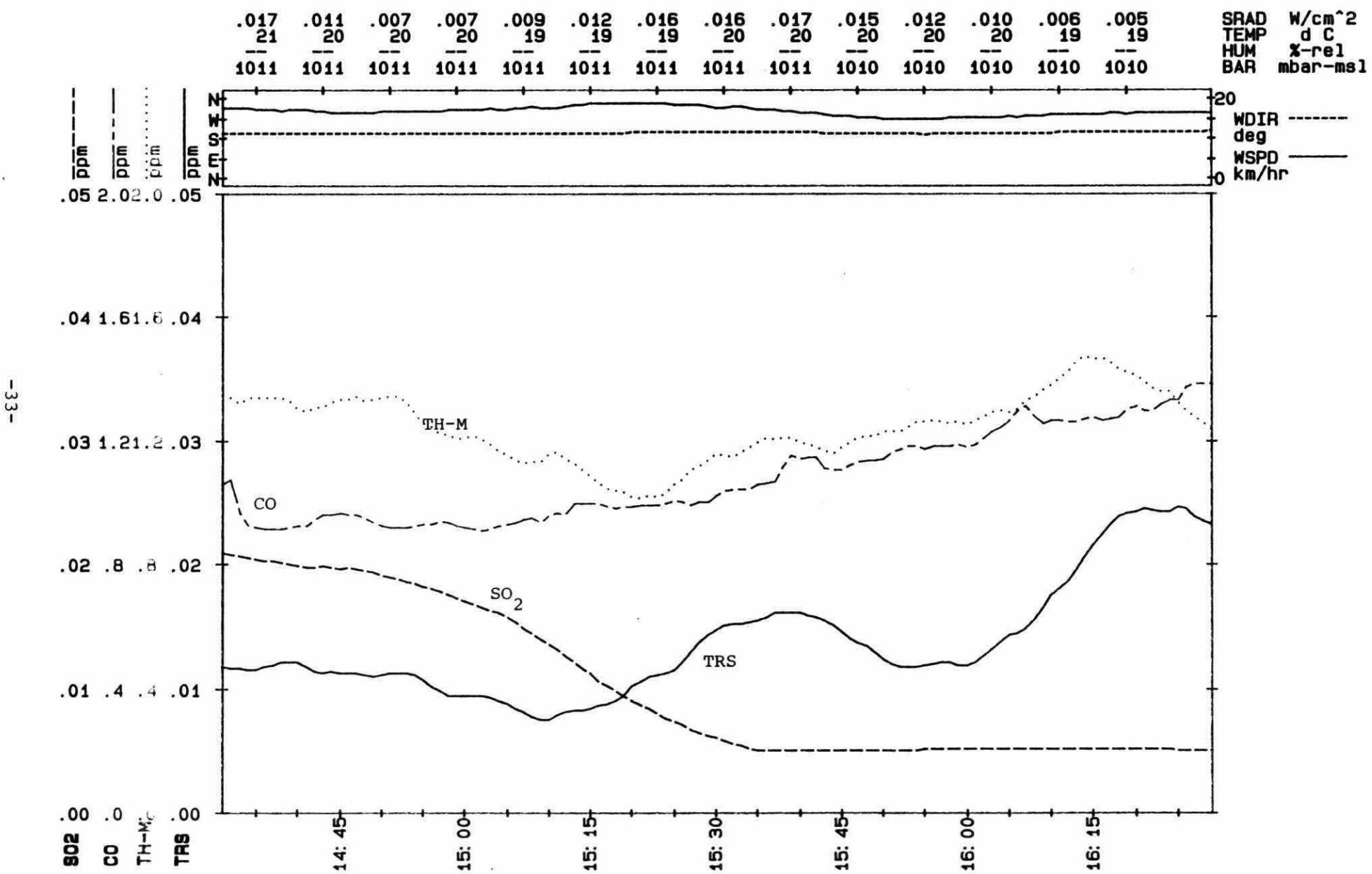
+ Average is above Provincial Std/Criteria

Percent Valid Data Required for Valid Average: 90.0 %

Averaging Started at Nearest: .0 min

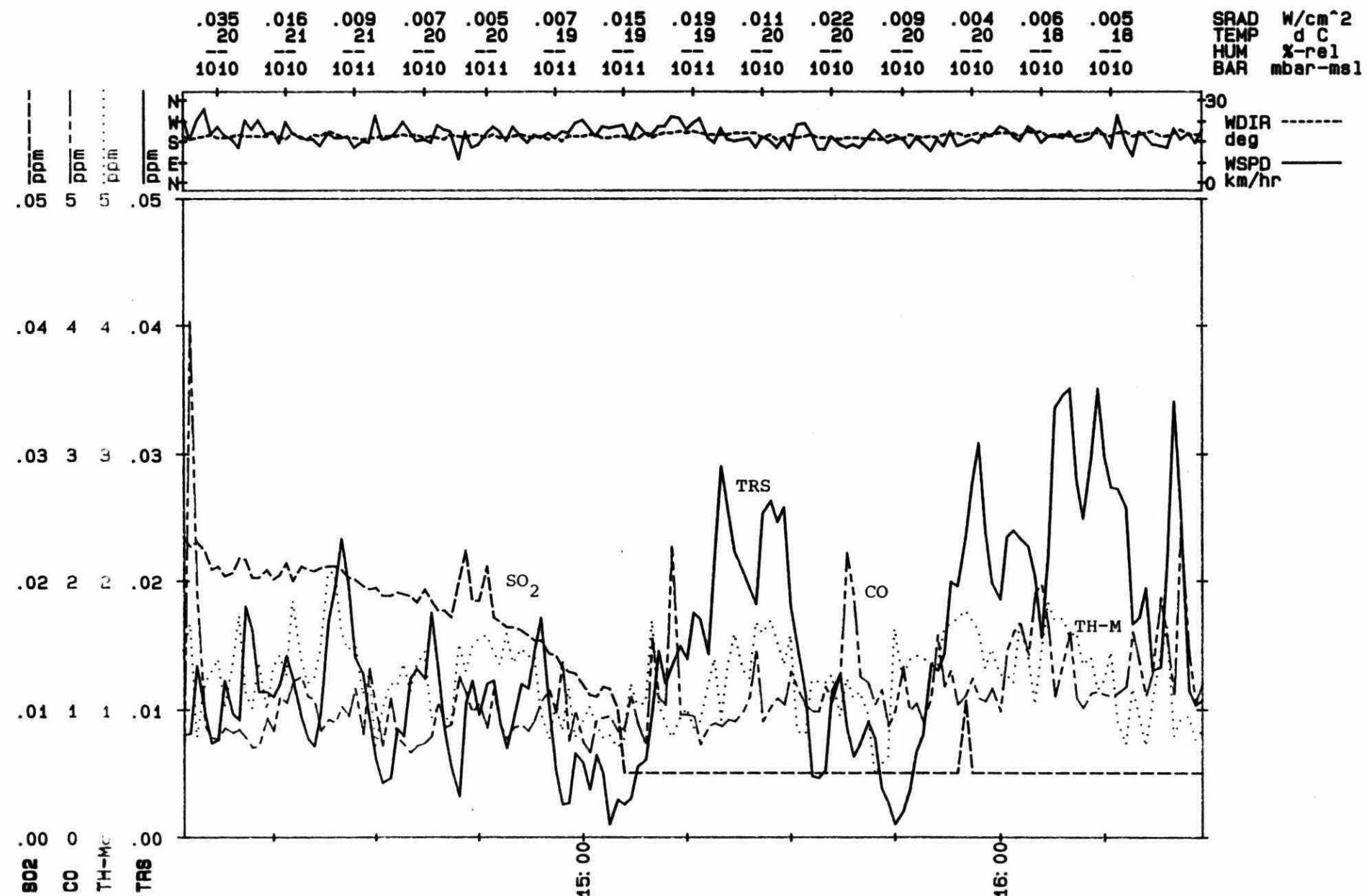
HAMILTON_85: B241

Start: 85/10/24 14:01 Scan: 60 sec. Ave: 30.00 min.
 Loc: North end of Strathearne Avenue...downwind of Domtar...TRS



HAMILTON_85: B241

Start: 85/10/24 14:01 Scan: 60 sec. Ave: 1.00 min.
 Loc: North end of Strathearn Avenue...downwind of Domtar...TRS



HAMILTON 85 : A862

Start: 85/11/86 12:44 Scan: 60 sec
 Average: 30.00 min Report: 10.00 min
 Loc: Stelco #2 Rod Mill...upwind of Domtar

Time	CO Temp	TRS Barom	THC Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone	SolarRad
12:44-13:14	4.7 9.1	.003 1008.1	3.46 24.	1.62 289.	1.83	.11	.07	.04	.018	.003
12:54-13:24	3.9 9.0	.002 1008.1	3.33 25.	1.47 288.	1.84	.10	.06	.04	.020	.003
13:04-13:34	3.1 9.0	nd 1008.0	3.22 24.	1.36 285.	1.85	.10	.06	.04	.017	.004
13:14-13:44	2.6 9.0	nd 1007.9	3.13 22.	1.28 283.	1.84	.10	.06	.04	.016	.005
13:24-13:54	2.1 9.0	nd 1007.9	3.08 20.	1.23 284.	1.84	.10	.06	.04	.016	.004
13:34-14:04	1.3 9.0	nd 1007.5	3.13 18.	1.24 287.	1.85	.10	.06	.04	.015	.004
13:44-14:14	.9 8.9	nd 1007.6	3.11 19.	1.20 286.	1.87	.10	.06	.04	.013	.003

Statistics	CO Temp	TRS Barom	THC Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone	SolarRad
Units	ppm d C	ppm mbar-msl	ppm km/h	ppm deg	ppm	ppm	ppm	ppm	ppm	W/cm^2
Arith. Mean	2.77 9.0	.0021 1007.9	3.229	1.363	1.847	.101	.059	.041	.016	.0034
Std. Dev.	3.43 .2	.0010 .8	.265	.270	.045	.012	.011	.008	.016	.0012
Geo. Mean	.88	.0019	3.219	1.338	1.847	.101	.059	.041	.011	-
Geo.Std.Dev	6.49	1.6850	1.084	1.212	1.025	1.126	1.182	1.200	2.421	-
Min Reading	.05 8.0	.0010 1000.7	2.814 10.1	.916 265.5	1.756	.080	.041	.028	.002	.0017
Max Reading	15.35 9.2	.0053 1000.2	3.930 37.1	2.161 311.9	2.045	.140	.106	.082	.070	.0069
Min Average	.94 8.9	.0016 1007.5	3.077 17.9	1.201 283.3	1.832	.097	.055	.038	.013	.0026
Max Average	4.66 9.1	.0026 1000.1	3.464 24.8	1.624 288.9	1.866	.108	.066	.042	.028	.0045
# Valid Rdgs	92. 92.	92. 92.	92. 92.	92. 92.	92.	92.	92.	92.	92.	92.

- Invalid Data / Not Calculated

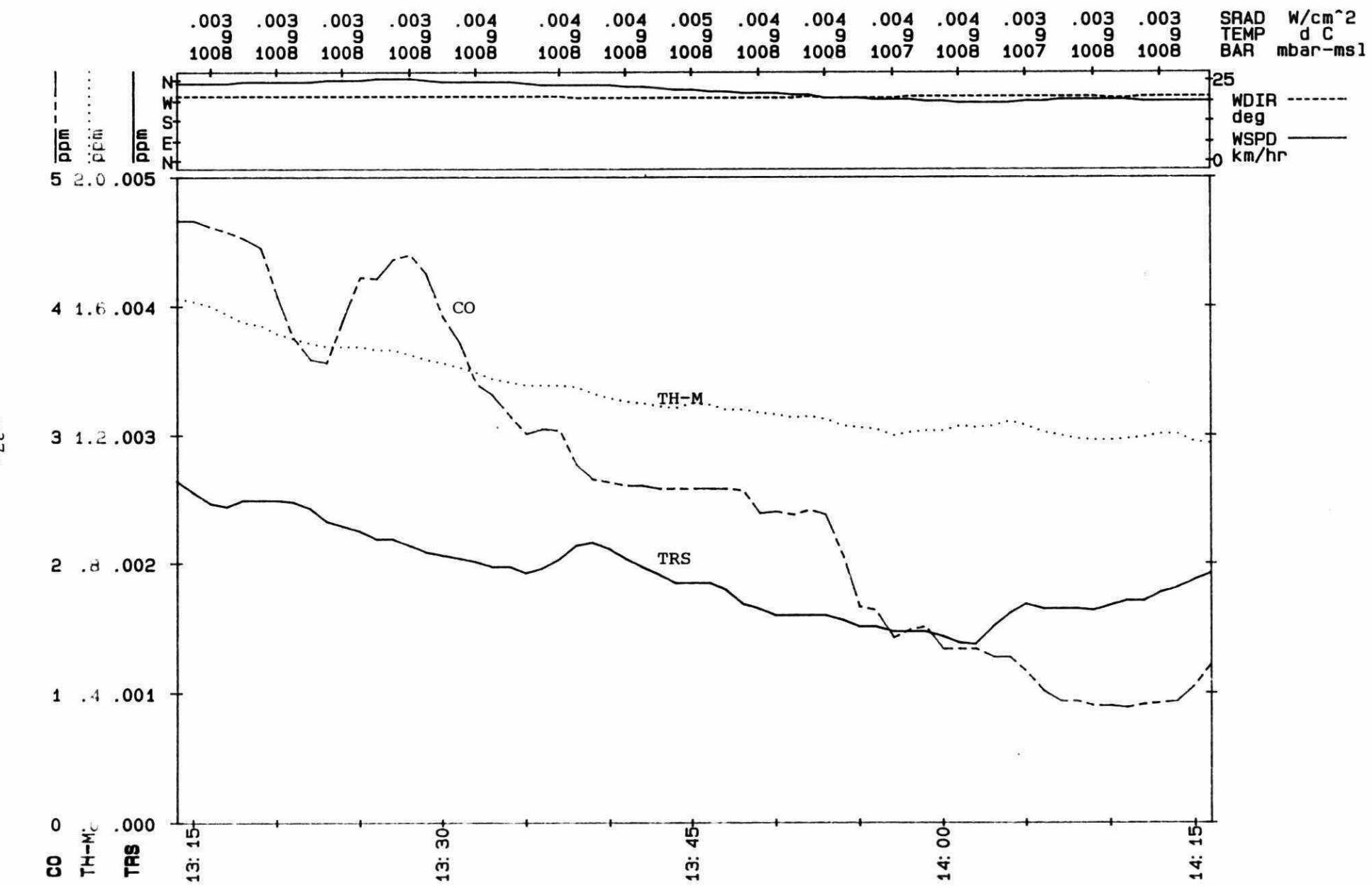
nd Average is less than Min. Detectable Level

a One or more readings Missing

Percent Valid Data Required for Valid Average: 90.0 %
 Averaging Started at Nearest: .0 min

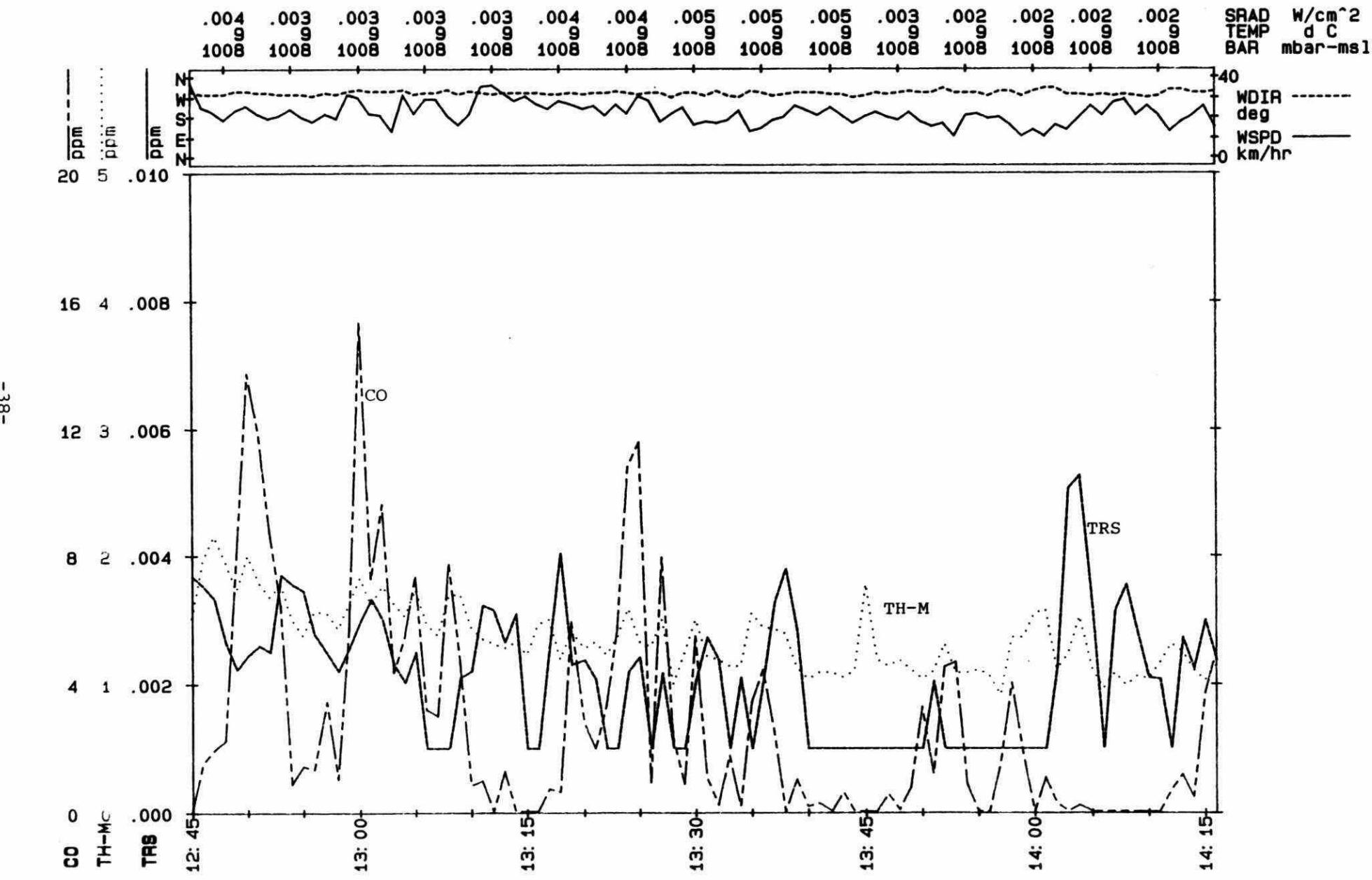
HAMILTON_85: A062

Start: 85/11/06 12:44 Scan: 60 sec. Ave: 30.00 min.
 Loc: Stelco #2 Rod Mill...upwind of Domtar



HAMILTON 85: A062

Start: 85/11/06 12:44 Scan: 60 sec. Ave: 1.00 min.
Loc: Stelco #2 Rod Mill...upwind of Domtar



HAMILTON_85 : A063

Start: 85/11/06 14:29 Scan: 60 sec
Average: 30.00 min Report: 10.00 min
Loc: On Strathearne..in front of and downwind of Domtar

Time	CO	TRS	THC	Non-CH4	Methane	NOx	NO2	NO	Ozone	SolarRad
	Temp	Barom	Wind-Spd	Wind-Dir						
14:29-14:59	1.4 9.7	.039 1007.8	3.96 7.	2.10 309.	1.87	.15	.05	.10	.038	.302

Statistics	CO Temp	TRS Barom	THC Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone	SolarRad
Units	ppm d C	ppm mbar-msl	ppm km/h	ppm deg	ppm	ppm	ppm	ppm	ppm	W/cm2
Arith. Mean	1.32 9.7	.0391 1007.8	3.981	2.124	1.868	.150	.051	.101	.037	.0020
Std. Dev.	1.14 .2	.0252 .0	.498	.489	.036	.028	.009	.026	.032	.0007
Geo. Mean	.80 -	.0291 -	3.953	2.073	1.868	.147	.050	.098	.023	-
Geo.Std.Dev	3.27 -	2.4648 -	1.126	1.251	1.019	1.289	1.190	1.293	2.883	-
Min Reading	.05 9.4	.0041 1007.7	3.093	1.267	1.796	.105	.037	.062	.005	.0006
Max Reading	4.28 10.0	.1009 1007.9	5.609	3.720	1.930	.198	.069	.157	.103	.0033
Min Average	1.38 9.7	.0387 1007.8	3.959	2.103	1.867	.152	.051	.103	.038	.0020
Max Average	1.38 9.7	.0387 1007.8	3.959	2.103	1.867	.152	.051	.103	.038	.0020
# Valid Rdgs	32. 32.	32. 32.	32.	32.	32.	32.	32.	32.	32.	32.

- Invalid Data / Not Calculated

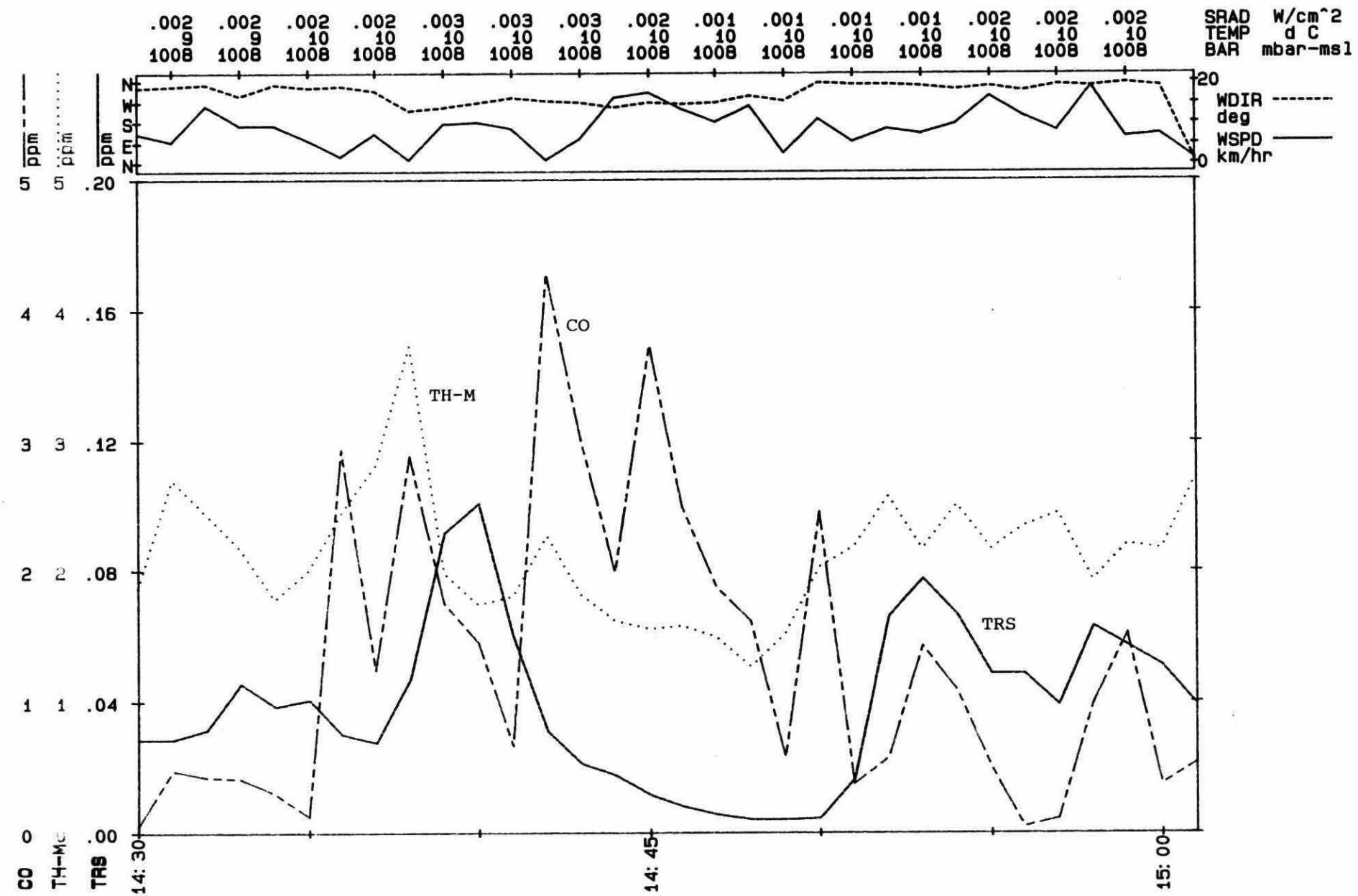
nd Average is less than Min. Detectable Level

a One or more readings Missing

Percent Valid Data Required for Valid Average: 90.0 %
 Averaging Started at Nearest: .0 min

HAMILTON_85: A063

Start: 85/11/06 14:29 Scan: 60 sec. Ave: 1.00 min.
Loc: On Strathearne...in front of and downwind of Domtar



HAMILTON_85 : 8861

Start: 85/11/06 11:29 Scan: 60 sec
 Average: 30.00 min Report: 10.00 min
 Loc: On Strathearne Avenue...downwind of Domtar...TRS

Time	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
11:29-11:59	5.4 + .008	.026 8.9	3.16 1000.3	nd 11.	2.49 232.	1.01	.06	.01	.05	.061
11:39-12:09	4.9 .009	.030 + 9.0	3.37 1000.0	nd 10.	2.74 235.	1.03	.05	.01	.05	.053
11:49-12:19	3.2 .009	.030 + 8.9	3.29 1007.7	nd 10.	2.66 237.	1.01	.05	.01	.04	.046
11:59-12:29	3.3 .009	.026 8.6	3.09 1007.4	.01 7.	2.41 247.	1.01	.06	.02	.04	.038
12:09-12:39	3.5 .007	.022 8.5	3.04 1007.3	nd 6.	2.35 250.	1.01	.07	.03	.05	.038
12:19-12:49	3.8 .006	.034 + 8.5	3.45 1007.2	.01 8.	2.89 246.	1.01	.09	.03	.06	.046
12:29-12:59	3.8 .006	.061 + 8.5	4.21 1007.3	.01 9.	3.89 247.	1.01	.09	.03	.06	.068
12:39-13:09	5.0 .005	.086 + 8.6	4.53 1007.4	.02 9.	4.27 255.	1.03	.09	.03	.06	.065
12:49-13:19	5.2 + .005	.085 + 8.7	4.29 1007.4	.02 8.	3.93 278.	1.05	.09	.03	.06	.046
12:59-13:29	5.3 + .005	.099 + 8.9	4.08 1007.4	.02 8.	3.66 277.	1.05	.09	.03	.06	.036
13:09-13:39	3.9 .005	.085 + 9.0	4.12 1007.3	.02 8.	3.75 263.	1.02	.10	.03	.07	.042
13:19-13:49	3.9 .005	.092 + 8.9	4.25 1007.2	.02 9.	3.95 246.	1.00	.10	.03	.07	.047
13:29-13:59	4.3 .005	.053 + 8.8	3.56 1007.1	.01 7.	3.05 260.	1.00	.08	.03	.06	.027
13:39-14:09	3.7 .004	.032 + 8.6	2.78 1007.1	.02 7.	2.82 296.	1.00	.06	.03	.04	.013
13:49-14:19	3.4 .003	.009 8.6	2.24 1007.2	.03 9.	1.28 320.	1.02	.06	.03	.03	nd
13:59-14:29	3.2 .003	.004 8.6	2.16 1007.2	.04 9.	1.14 324.	1.03	.06	.03	.03	.005

Statistics	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
Units	ppm W/cm^2	ppm d C	ppm mbar-msl	ppm km/h	ppm deg	ppm	ppm	ppm	ppm	ppm
Arith. Mean	4.21 .0059	.0449 8.7	3.378 1007.4	.018 -	2.773 -	1.019	.074	.026	.050	.038
Std. Dev.	3.61 .0024	.0464 .2	1.097 .4	.013 -	1.427 -	.849	.024	.010	.019	.045
Geo. Mean	3.31 -	.0222 -	3.288 -	.014 -	2.482 -	1.018	.069	.024	.045	.015
Geo.Std.Dev	1.95 -	4.3414 -	1.381 -	2.078 -	1.749 -	1.048	1.440	1.618	1.686	4.726
Min Reading	.81 .0026	.0010 8.2	1.774 1006.9	.005 .2	.744 24.7	.937	.024	.005	.005	.002
Max Reading	25.01 .0151	.2769 9.5	6.833 1008.7	.079 22.6	7.300 354.3	1.295	.145	.050	.104	.201
Min Average	3.16 .0031	.0043 8.5	2.157 1007.1	.008 5.9	1.142 231.6	.996	.049	.014	.031	.004
Max Average	5.37 .0093	.0995 9.0	4.529 1008.3	.037 10.7	4.275 323.9	1.049	.098	.035	.069	.068
# Valid Rdgs	100. 100.	100. 100.	100. 100.	100. 100.	100. 100.	100.	100.	100.	100.	100.
Min.Det.Lev	.10 -	.0020 -	.100 950.0	.010 -	.100 -	.100	.010	.010	.010	.004
1/2hr Std	5.20 -	.0270 -	- -	.300 -	- -	-	.270 -	- -	- -	.100

- Invalid Data / Not Calculated

nd Average is less than Min. Detectable Level

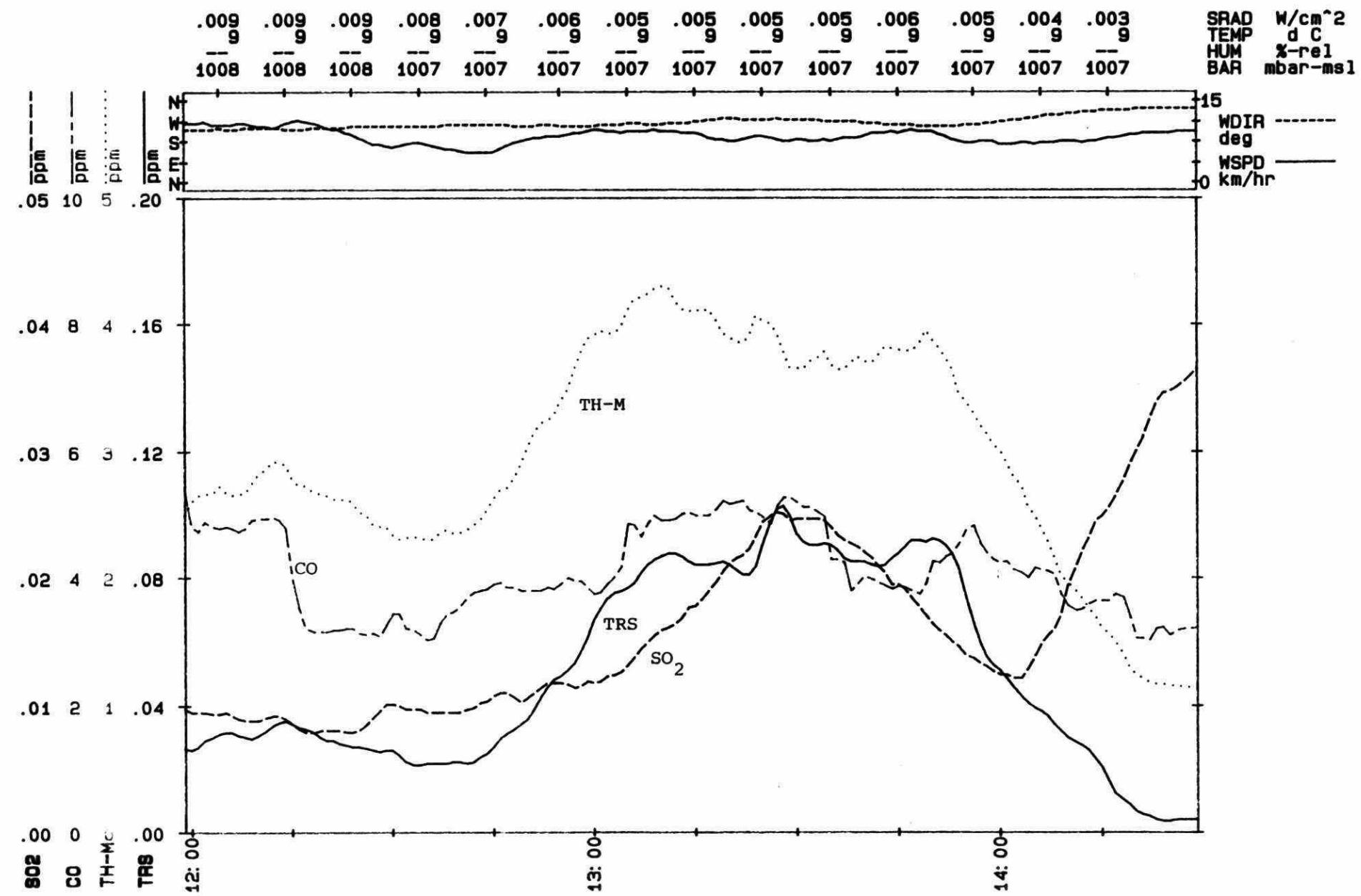
a One or more readings Missing

* Average is above Provincial Std/Criteria

Percent Valid Data Required for Valid Average: 90.0 %
 Averaging Started at Nearest: .0 min

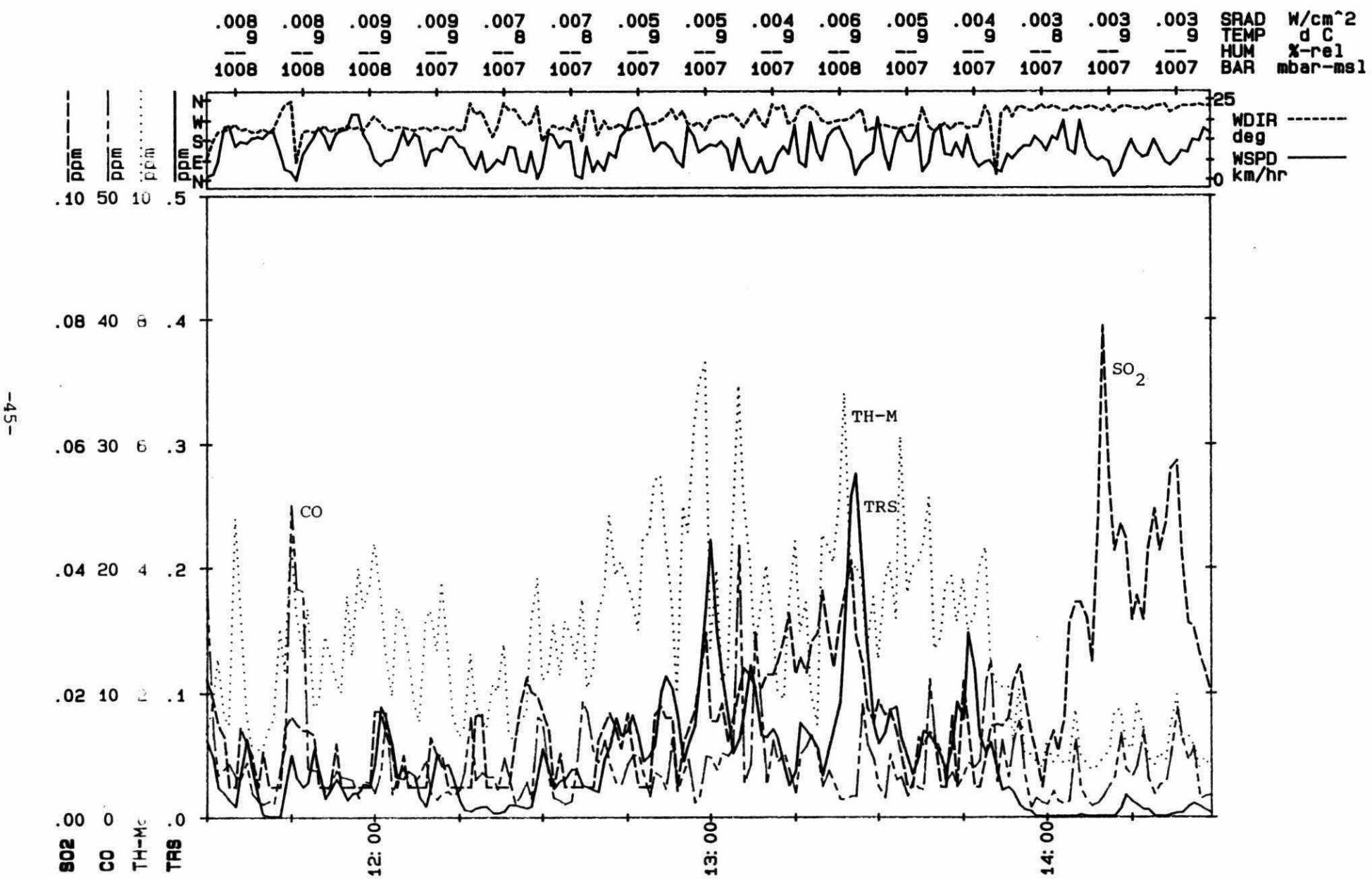
HAMILTON_85: B061

Start: 85/11/06 11:29 Scan: 60 sec. Ave: 30.00 min.
 Loc: On Strathearne Avenue...downwind of Domtar...TRS



HAMILTON_85: B061

Start: 85/11/06 11:29 Scan: 60 sec. Ave: 1.00 min.
 Loc: On Strathearne Avenue...downwind of Domtar...TRS



HAMILTON SURVEY-85

MANU#2
OCTOBER 18, 1985

MONITORING PERIOD B181 B182 B182 B182

TIME	1152-1222	1331-1431
	1231-1331	1438-1538

PROPANE	30.73	26.26	30.77	32.79
PROPADIENE				
PROPYNE				
CHLOROMETHANE				
CYCLOPROPANE				
2-METHYLPROPANE	14.87	8.64	9.78	10.30
CHLOROETHENE				
1-BUTENE	2.64	0.68	1.93	1.87
1,3-BUTADIENE				
BUTANE	48.16	27.81	30.49	30.08
1-BUTYNE				
CHLOROETHANE				
3-METHYL-1-BUTENE				
2-METHYLBUTANE	48.26	22.27	30.68	30.23
1-PENTENE	1.45	0.46	0.74	0.75
PENTANE	34.04	14.61	20.09	19.87
2-METHYL-1,3-BUTADIENE	1.32			
TRANS-2-PENTENE *	2.27		0.72	0.89
cis-2-PENTENE *	3.14		1.06	1.29
DICHLOROMETHANE				
2-METHYL-2-BUTENE	6.73			
3-CHLOROPROPENE				
2,2-DIMETHYLBUTANE	1.59	0.78	1.10	1.10
4-METHYL-1-PENTENE				
3-METHYL-1-PENTENE				
CYCLOPENTANE	2.31	1.01	1.43	1.48
2,3-DIMETHYLBUTANE	3.02	1.33	2.05	2.03
2-METHYLPENTANE	13.88	6.05	9.17	9.12
3-METHYLPENTANE	8.67	3.88	5.97	5.94
1-HEXENE				
cis-1,2-DICHLOROETHENE				
2-CHLOROBUTANE				
HEXANE	11.64	5.04	7.78	7.78
TRICHLOROMETHANE				
TRANS-3-HEXENE				
3-CHLORO-2-METHYLPROPENE				
METHYLCYCLOPENTANE	4.90	2.07	3.19	3.32
1,2-DICHLOROETHANE				
1,1,1-TRICHLOROETHANE				
1-CHLOROBUTANE				
BENZENE	11.91	6.11	8.08	6.83
TETRACHLOROMETHANE				
CYCLOHEXANE	1.18			0.85
2,3-DIMETHYL PENTANE *	5.24	2.63	4.58	4.60
2-METHYLHEXANE *	5.55	2.79	4.85	4.87
CYCLOHEXENE				
3-METHYLHEXANE	3.59	1.79	3.16	3.13
1,2-DICHLOROPROPANE				
2,3-DICHLOROPROPENE				
TRICHLOROETHENE	1.45			
2,2,4-TRIMETHYL PENTANE	2.63	1.53	2.69	2.81

1-HEPTENE				
HEPTANE	2.90	1.38	2.33	2.22
1-CHLORO-3-METHYLBUTANE				
TRANS-2-HEPTENE				
METHYLCYCLOHEXANE	2.01	0.89	1.43	1.53
4-METHYLCYCLOHEXENE				
2,5-DIMETHYLHEXANE		0.32	0.59	0.60
1-CHLOROPENTANE				
1,1,2-TRICHLOROETHANE				
TOLUENE	16.96	7.12	12.54	12.87
1,3-DICHLOROPROPANE				
2-METHYLHEPTANE	1.75	0.81	1.36	1.52
4-METHYLHEPTANE			0.51	0.56
3-METHYLHEPTANE	1.79	0.87	1.47	1.64
1,2-DIBROMOETHANE				
1-OCTENE				
TRANS-1,2-DIMETHYLCYCLOHEXANE				
TRANS-4-OCTENE				
TETRACHLOROETHENE	22.59	2.19	2.61	3.37
OCTANE	1.56	0.65	0.98	1.13
2-METHYL-1-HEPTENE				
2-OCTENE				
CIS-1,2-DIMETHYLCYCLOHEXANE				
CHLOROBENZENE		0.48		
ETHYLCYCLOHEXANE	*			0.32
PROPYLCYCLOPENTANE	*			
1-CHLOROHEXANE				
ETHYLBENZENE	3.20	1.59	2.98	2.61
a/o XYLENE	12.96	6.31	11.51	10.22
4-METHYLOCTANE	1.12	0.62		
2-METHYLOCTANE	0.75	0.40	0.76	0.88
STYRENE				
1,4-DICHLOROBUTANE				
O-XYLENE	2.95	1.89	2.61	2.52
1,1,2,2-TETRACHLOROETHANE				
1,2,3-TRICHLOROPROPANE				
1-NONENE				
NONANE	1.74	0.74	1.23	1.21
ISOPROPYLBENZENE				
2-CHLOROTOLUENE				
3-CHLOROTOLUENE				
PROPYLBENZENE	1.07	0.71	1.02	1.14
4-CHLOROTOLUENE		0.36	0.59	0.58
3-ETHYLTOLUENE	2.07	1.66	2.20	3.14
4-ETHYLTOLUENE				
1,3,5-TRIMETHYLBENZENE	1.83	1.34	1.85	2.22
2-ETHYLTOLUENE	0.95	0.75	1.04	1.27
tert-BUTYLBENZENE	*	3.07	1.55	2.44
1,2,4-TRIMETHYLBENZENE	*			1.08
1,3-DICHLOROBENZENE				
1-DECENE				
(CHLOROMETHYL)BENZENE				
1,5-DICHLOROPENTANE				
DECANE	1.72	1.12	1.61	1.31
SEC-BUTYLBENZENE				
3-(CHLOROMETHYL)HEPTANE				
1,2,3-TRIMETHYLBENZENE	1.25	1.19	1.35	2.06
1,1-ISOPROPYL-4-METHYLBENZENE		0.75	0.77	0.58
1,2-DICHLOROBENZENE				
INDAN		0.77	0.78	1.14
BUTYLCYCLOHEXANE				
1,3-DIETHYLBENZENE				0.71
1,4-DIETHYLBENZENE	*			1.21
BUTYLBENZENE	*			0.93
1,2-DIETHYLBENZENE				
UNDECANE	2.04		1.08	2.25

DECAHYDRONAPHTHALENE				1.43
1,2,3,5-TETRAMETHYLBENZENE				
1,2,3,4-TETRAMETHYLBENZENE				
1,2,3,4-TETRAHYDRONAPHTHALENE				1.36
1,4-DIISOPROPYLBENZENE				
DODECANE				0.68

Total Compounds Identified	45.00	43.00	45.00	53.00
Total # of Peaks	61.00	58.00	71.00	90.00
Total Area of Peaks	8115.29	8095.84	11174.40	13520.74
Area of Identified Peaks	6086.52	6206.57	8713.67	9175.85
Area % Identified Peaks	75.00	76.66	77.98	67.86
Total hydrocarbons ug/m3:	357.45	172.20	237.95	248.22
Alkanes ug/m3	245.68	131.67	174.10	177.52
Cycloalkanes ug/m3	10.40	3.97	6.05	7.50
Alkenes ug/m3	19.11	1.79	5.43	5.93
Cycloalkenes ug/m3	0.00	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00	0.00
Aromatics ug/m3	58.22	31.74	49.17	53.32
Chlorinated alkanes ug/m3	22.59	2.19	2.61	3.37
Chlorinated alkenes ug/m3	1.45	0.00	0.00	0.00
Chlorinated aromatics ug/m3	0.00	0.84	0.59	0.58
Toluene:Ethylbenzene	5.30	4.48	4.21	4.93
Benzene:Ethylbenzene	3.72	3.84	2.71	2.62
Xylenes:Ethylbenzene	4.97	5.16	4.74	4.88
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00	1.00

*-AMBIGUOUS IDENTIFICATION ON BOTH COLUMNS

**-THESE FIGURES DO NOT INCLUDE A LARGE PEAK ASSOCIATED WITH NAPHTHALENE WHICH CANNOT AT THIS TIME BE QUANTIFIED

HAMILTON SURVEY-85

MONITORING PERIOD	B225	B225	B225	B232	B233	B233	HANU#2 OCTOBER 23, 1985
TIME	0930-1030	1039-1109	1116-1216	1430-1500	1557-1657	1657-1757	
PROPANE	53.80	26.61	19.25	16.96	12.32	9.08	
PROPADIENE							
PROPYNE							
CHLOROMETHANE							
CYCLOPROPANE							
2-METHYLPROPANE	21.28	11.98	15.18	12.73	3.99	3.30	
CHLOROETHENE							
1-BUTENE		3.36		2.38	1.44		
1,3-BUTADIENE							
BUTANE	77.64	40.66	56.68	46.28	13.44	9.36	
1-BUTYNE							
CHLOROETHANE							
3-METHYL-1-BUTENE							
2-METHYLBUTANE	75.74	42.35	51.02	48.12	16.91	9.63	
1-PENTENE	1.98	1.43	1.24	1.32	0.43		
PENTANE	49.63	29.84	33.78	31.37	11.46	6.39	
2-METHYL-1,3-BUTADIENE							
TRANS-2-PENTENE *	4.32	2.98	3.30	2.66	1.06	0.56	
CIS-2-PENTENE *	4.74	3.45	3.77	2.87	1.47	0.80	
DICHLOROMETHANE	6.92						
2-METHYL-2-BUTENE	3.74	5.86	7.01	7.50	1.68		
3-CHLOROPROPENE							
2,2-DIMETHYLBUTANE	2.42	1.32	1.30	1.50	0.53		
4-METHYL-1-PENTENE							
3-METHYL-1-PENTENE							
CYCLOPENTANE	5.16	2.58	2.86	2.20	0.92	0.59	
2,3-DIMETHYLBUTANE	5.21	2.42	2.60	2.68	1.06	0.62	
2-METHYLPHANTANE	26.66	11.91	13.50	12.61	5.34	3.13	
3-METHYLPHANTANE	18.98	7.96	9.22	8.16	3.72	2.29	
1-HEXENE	1.11						
CIS-1,2-DICHLOROETHENE							
2-CHLOROBUTANE							
HEXANE	28.60	10.86	13.21	10.35	4.72	3.01	
TRICHLOROMETHANE							
TRANS-3-HEXENE	1.00						
3-CHLORO-2-METHYLPROPENE							
METHYLCYCLOPENTANE	11.00	4.71	5.31	4.37	1.86	1.24	
1,2-DICHLOROETHANE							
1,1,1-TRICHLOROETHANE	3.54		2.91				
1-CHLOROBUTANE							
BENZENE	43.27	26.08	51.19	76.85	16.71	12.79	
TETRACHLOROMETHANE							
CYCLOHEXANE	3.23		1.60	1.99	0.56		
2,3-DIMETHYLPHANTANE *	14.49	5.31	6.04	5.23	2.50	1.64	
2-METHYLHEXANE *	15.35	5.63	6.40	5.54	2.64	1.74	
CYCLOHEXENE							
3-METHYLHEXANE	9.66	3.65	3.94	3.21	1.74	1.13	
1,2-DICHLOROPROPANE	3.41		3.02	3.04			
2,3-DICHLOROPROPENE							
TRICHLOROETHENE	4.79	1.70	2.63	2.38			
2,2,4-TRIMETHYLPHANTANE	5.74	2.11	1.83	2.71	1.01	0.84	

1-HEPTENE						
HEPTANE	7.98	3.11	3.12	2.71	1.31	0.78
1-CHLORO-3-METHYLBUTANE						
TRANS-2-HEPTENE	0.95					
METHYLCYCLOHEXANE	5.84	1.88	2.06	1.75	0.86	0.52
4-METHYLCYCLOHEXENE						
2,5-DIMETHYLHEXANE	1.73		0.55			
1-CHLOROPENTANE						
1,1,2-TRICHLOROETHANE						
TOLUENE	61.18	19.00	42.45	56.26	7.58	6.14
1,3-DICHLOROPROPANE						
2-METHYLHEPTANE	5.05	2.49	1.75	1.63	0.78	0.65
4-METHYLHEPTANE	1.76		0.62			
3-METHYLHEPTANE	4.55	1.81	2.03	1.78	0.84	0.47
1,2-DIBROMOETHANE						
1-OCTENE	1.30					
TRANS-1,2-DIMETHYLCYCLOHEXANE	0.90					
TRANS-4-OCTENE						
TETRACHLOROETHENE	13.42	2.95	2.54			
2-METHYL-1-HEPTENE	3.51	1.48	1.42	1.49	0.71	0.34
OCTANE						
2-OCTENE	0.74					
CIS-1,2-DIMETHYLCYCLOHEXANE	1.10					
CHLOROBENZENE						
ETHYLCYCLOHEXANE *	1.67		0.55			
PROPYLCYCLOPENTANE *	3.09		1.02			
1-CHLOROHXANE						
ETHYLBENZENE	18.64	11.74	4.18	4.76	1.22	0.99
m/o-XYLENE	82.16	42.30	19.14	26.84	4.62	2.96
4-METHYLOCTANE		1.52			0.71	
2-METHYLOCTANE			0.89	0.97	0.48	
STYRENE	13.27			8.03		
1,4-DICHLOROBUTANE						
O-XYLENE	16.47	9.45	4.19	5.19	1.53	0.99
1,1,2,2-TETRACHLOROETHANE						
1,2,3-TRICHLOROPROPANE						
1-NONENE						
NONANE	4.95	2.92	1.98	1.80	1.49	0.59
ISOPROPYLBENZENE	0.94		0.34			
2-CHLOROTOLUENE	1.69					
3-CHLOROTOLUENE						
PROPYLBENZENE	3.85	2.48	1.47	1.36	0.79	0.60
4-CHLOROTOLUENE	2.09	1.45	0.97	0.73	0.68	0.60
3-ETHYLtolUENE	8.98	6.75	3.15	2.92	1.75	1.18
4-ETHYLtolUENE						
1,3,5-TRIMETHYLBENZENE	7.64	3.78	2.81	2.72	1.73	0.91
2-ETHYLtolUENE	3.98	1.58	1.54	1.18	0.88	0.54
tert-BUTYLBENZENE *	8.51	8.74	4.79	3.80	3.97	2.56
1,2,4-TRIMETHYLBENZENE *						
1,3-DICHLOROBENZENE						
1-DECENE						
(CHLOROMETHYL)BENZENE						
1,5-DICHLOROPENTANE						
DECANE	6.47	6.37	3.45	2.30	2.87	1.60
sec-BUTYLBENZENE						
3-(CHLOROMETHYL)HEPTANE						
1,2,3-TRIMETHYLBENZENE	6.37	3.28	2.57	2.38	1.74	1.22
1,1-ISOPROPYL-4-METHYLBENZENE	3.05	3.64	2.23		1.43	
1,2-DICHLOROBENZENE	1.66					
INDAN	7.41	2.64	2.48	3.29	1.09	
BUTYLCYCLOHEXANE	0.91	1.43	0.94		0.73	
1,3-DIETHYLBENZENE	2.51		1.10			
1,4-DIETHYLBENZENE *	2.88		1.56			
BUTYLBENZENE *	2.94		1.21			
1,2-DIETHYLBENZENE						
UNDECANE	6.64	5.96	4.12	2.81	3.55	2.52

DECAHYDRONAPHTHALENE	3.56	1.71			
1235-TETRAMETHYLBENZENE					
1234-TETRAMETHYLBENZENE					
1234-TETRAHYDRONAPHTHALENE	3.50	1.87			
1,4-DIISOPROPYLBENZENE					
DODECANE	1.91	1.83	0.65	1.12	0.64

Total compounds identified	69.00	47.00	58.00	47.00	47.00	37.00
Total # of peaks	163.00	69.00	106.00	68.00	75.00	47.00
Total area of peaks	42573.64	10051.38	21578.16	11203.53	8214.21	5412.14
Area of identified peaks	32963.62	8048.13	16939.01	9660.51	6161.05	4065.23
Area % identified peaks	77.42	80.07	78.50	86.23	75.00	75.11
	**	**	**	**	**	**
Total hydrocarbons ug/m ³ :	841.16	405.34	445.59	452.36	151.97	94.94
Alkanes ug/m ³	446.24	228.62	252.46	222.10	94.33	59.41
Cycloalkanes ug/m ³	32.90	19.60	14.34	10.31	4.93	2.35
Alkenes ug/m ³	23.39	18.56	16.74	18.22	6.79	1.70
Cycloalkenes ug/m ³	0.00	0.00	0.00	0.00	0.00	0.00
Alkynes ug/m ³	0.00	0.00	0.00	0.00	0.00	0.00
Aromatics ug/m ³	301.11	141.46	149.98	195.58	45.04	30.88
Chlorinated alkanes ug/m ³	27.29	2.95	8.47	3.04	0.00	0.00
Chlorinated alkenes ug/m ³	4.79	1.70	2.63	2.38	0.00	0.00
Chlorinated aromatics ug/m ³	5.44	1.45	0.97	0.73	0.68	0.60
Toluene:Ethylbenzene	3.28	1.62	10.16	11.82	6.21	6.20
Benzene:Ethylbenzene	2.32	2.22	12.25	16.14	13.70	12.92
Xylenes:Ethylbenzene	5.29	4.41	5.58	6.73	5.04	3.99
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00	1.00	1.00	1.00

**=AMBIGUOUS IDENTIFICATION ON BOTH COLUMNS

**=THESE FIGURES DO NOT INCLUDE A LARGE PEAK ASSOCIATED WITH NAPHTHALENE
WHICH CANNOT AT THIS TIME BE QUANTIFIED

HAMILTON SURVEY-85

MONITORING PERIOD B241 B241 B241

NAMU#2
OCTOBER 24, 1985TIME 1400-1430 1525-1610
 1455-1525

PROPANE	24.27	25.27	20.20
PROPA DIENE			
PROPYNE			
CHLOROMETHANE			
CYCLOPROPANE			
2-METHYLPROPANE	10.06	8.23	8.51
CHLOROETHENE			
1-BUTENE		1.58	1.59
1,3-BUTADIENE			1.19
BUTANE	32.40	24.05	27.12
1-BUTYNE			
CHLOROETHANE			
3-METHYL-1-BUTENE			
2-METHYLBUTANE	30.13	22.46	27.06
1-PENTENE			0.81
PENTANE	19.15	14.39	17.83
2-METHYL-1,3-BUTADIENE			
TRANS-2-PENTENE *	1.72	1.02	1.33
cis-2-PENTENE *	2.38	1.43	1.87
DICHLOROMETHANE			
2-METHYL-2-BUTENE	3.91	2.80	3.33
3-CHLOROPROPENE			
2,2-DIMETHYLBUTANE			0.96
4-METHYL-1-PENTENE			
3-METHYL-1-PENTENE			
CYCLOPENTANE	2.04	1.30	1.52
2,3-DIMETHYLBUTANE	2.37	1.58	2.02
2-METHYL PENTANE	11.50	7.12	9.46
3-METHYL PENTANE	8.03	4.72	6.26
1-HEXENE			
cis-1,2-DICHLOROETHENE			
2-CHLOROBUTANE			
HEXANE	10.85	6.59	8.49
TRICHLOROMETHANE			
TRANS-3-HEXENE			
3-CHLORO-2-METHYLPROPENE			
METHYLCYCLOPENTANE	4.86	2.93	3.85
1,2-DICHLOROETHANE			
1,1,1-TRICHLOROETHANE			
1-CHLOROBUTANE			
BENZENE	129.29	102.15	143.79
TETRACHLOROMETHANE	47.45	40.72	50.93
CYCLOHEXANE	1.48	1.08	0.89
2,3-DIMETHYL PENTANE *	8.81	4.65	6.33
2-METHYLHEXANE *	9.33	4.92	6.70
CYCLOHEXENE			
3-METHYLHEXANE	5.79	2.85	3.94
1,2-DICHLOROPROPANE			
2,3-DICHLOROPROPENE			
TRICHLOROETHENE			
2,2,4-TRIMETHYL PENTANE	2.62	2.06	2.35

1-HEPTENE			
HEPTANE	4.93	2.38	2.92
1-CHLORO-3-METHYLBUTANE			
TRANS-2-HEPTENE			
METHYLCYCLOHEXANE	3.18	1.63	2.03
4-METHYLCYCLOHEXENE			
2,5-DIMETHYLHEXANE			0.78
1-CHLOROPENTANE			
1,1,2-TRICHLOROETHANE			
TOLUENE	107.15	78.77	114.37
1,3-DICHLOROPROPANE			
2-METHYLHEPTANE	4.59	2.41	2.05
4-METHYLHEPTANE			0.72
3-METHYLHEPTANE	3.21	1.82	2.42
1,2-DIBROMOETHANE			
1-OCTENE			
TRANS-1,2-DIMETHYLCYCLOHEXANE			
TRANS-4-OCTENE			
TETRACHLOROETHENE			4.70
OCTANE	2.79	1.37	1.67
2-METHYL-1-HEPTENE			
2-OCTENE			
CIS-1,2-DIMETHYLCYCLOHEXANE			
CHLOROBENZENE			
ETHYLCYCLOHEXANE *	1.02		0.59
PROPYLCYCLOPENTANE *	1.35		1.08
1-CHLOROHEXANE			
ETHYLBENZENE	25.04	18.82	28.40
M-XYLENE	64.29	49.02	66.10
4-METHYLOCTANE	2.83		
2-METHYLOCTANE			1.32
STYRENE		3.14	3.42
1,4-DICHLOROBUTANE			
O-XYLENE	13.31	10.05	13.34
1,1,2,2-TETRACHLOROETHANE			
1,2,3-TRICHLOROPROPANE			1.37
1-NONENE			
NONANE	3.17	1.98	2.37
ISOPROPYLBENZENE	1.87	1.33	1.75
2-CHLOROTOLUENE			
3-CHLOROTOLUENE			
PROPYLBENZENE	2.82	1.86	2.19
4-CHLOROTOLUENE	2.07	0.76	0.92
3-ETHYLTOLUENE	15.41	11.84	11.15
4-ETHYLTOLUENE			
1,3,5-TRIMETHYLBENZENE	11.31	8.60	11.07
2-ETHYLTOLUENE	3.63	2.19	2.71
tert-BUTYLBENZENE *	25.83	17.09	22.22
1,2,4-TRIMETHYLBENZENE *			
1,3-DICHLOROBENZENE			
1-DECENE			
(CHLOROMETHYL)BENZENE			
1,5-DICHLOROPENTANE			
DECANE	4.92	2.96	3.37
SEC-BUTYLBENZENE			
3-(CHLOROMETHYL)HEPTANE			
1,2,3-TRIMETHYLBENZENE	6.03	4.14	5.15
1-ISOPROPYL4METHYLBENZENE	3.77	2.11	1.67
1,2-DICHLOROBENZENE			
INDAN	54.21	49.47	63.91
BUTYLCYCLOHEXANE			
1,3-DIETHYLBENZENE			1.19
1,4-DIETHYLBENZENE *	1.77		1.81
BUTYLBENZENE *	1.86		1.41
1,2-DIETHYLBENZENE			
UNDECANE	4.93	2.82	3.34

DECANHYDRONAPHTHALENE	3.26	1.77
1,2,3,5-TETRAMETHYLBENZENE		
1,2,3,4-TETRAMETHYLBENZENE		
1,2,3,4-TETRAHYDRONAPHTHALENE		2.26
1,4-DIISOPROPYLBENZENE		
DODECANE		

Total Compounds Identified	46.00	43.00	59.00
Total # of Peaks	83.00	63.00	100.00
Total Area of Peaks	23698.12	18093.58	35714.20
Area of Identified Peaks	15500.26	11850.65	23405.22
Area % Identified Peaks	65.40	65.49	65.53
	**	**	**
Total hydrocarbons ug/m ³ :	750.07	560.46	745.87
Alkanes ug/m ³	204.97	143.26	166.52
Cycloalkanes ug/m ³	13.93	6.94	9.96
Alkenes ug/m ³	10.80	8.20	11.79
Cycloalkenes ug/m ³	0.00	0.00	0.00
Alkynes ug/m ³	0.00	0.00	0.00
Aromatics ug/m ³	470.85	360.58	499.68
Chlorinated alkanes ug/m ³	47.45	40.72	57.00
Chlorinated alkenes ug/m ³	0.00	0.00	0.00
Chlorinated aromatics ug/m ³	2.07	0.76	0.92
Toluene:Ethylbenzene	4.28	4.19	4.03
Benzene:Ethylbenzene	5.16	5.43	5.06
Xylenes:Ethylbenzene	3.10	3.14	2.80
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00

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WHICH CANNOT AT THIS TIME BE QUANTIFIED

HAMILTON SURVEY-85

MONITORING PERIOD	B061	B061	B061	B061	MAMU#2 NOVEMBER 6, 1985
TIME	1127-1157	1246-1316			
	1206-1236	1329-1359			
ETHANE					
PROPANE	23.61	11.02	23.38		
PROPA DIENE					
PROPYNE					
CHLOROMETHANE					
CYCLOPROPANE					
2-METHYLPROPANE					
CHLOROETHENE					
1-BUTENE	3.28	2.92	3.98	1.65	
1,3-BUTADIENE	3.55		3.09	1.42	
BUTANE	24.28	33.96	35.56	27.20	
1-BUTYNE					
CHLOROETHANE					
3-METHYL-1-BUTENE					
2-METHYLBUTANE	33.43	39.78	48.70	33.37	
1-PENTENE	1.19		1.55	1.01	
PENTANE	26.78	30.49	37.61	25.13	
2-METHYL-1,3-BUTADIENE					
TRANS-2-PENTENE *	2.34	2.94	3.42	2.37	
cis-2-PENTENE *	2.72	3.01	3.66	2.48	
DICHLOROMETHANE					
2-METHYL-2-BUTENE	5.32	7.03	7.16	3.18	
3-CHLOROPROPENE					
2,2-DIMETHYLBUTANE	2.16	1.84	2.01	1.79	
4-METHYL-1-PENTENE					
3-METHYL-1-PENTENE					
CYCLOPENTANE	3.26	2.95	3.65	2.80	
2,3-DIMETHYLBUTANE	4.44	3.95	4.40	3.70	
2-METHYLPENTANE	27.32	23.64	26.45	22.35	
3-METHYLPENTANE	24.11	19.56	21.34	19.10	
1-HEXENE					
cis-1,2-DICHLOROETHENE					
2-CHLOROBUTANE					
HEXANE	43.57	33.74	36.84	33.70	
TRICHLOROMETHANE					
TRANS-3-HEXENE					
3-CHLORO-2-METHYLPROPENE					
METHYLCYCLOPENTANE	10.96	9.04	11.16	8.76	
1,2-DICHLOROETHANE					
1,1,1-TRICHLOROETHANE	9.09	14.18	33.37	3.17	
1-CHLOROBUTANE					
BENZENE	122.45	111.60	191.26	207.49	
TETRACHLOROMETHANE	44.44		80.70	75.75	
CYCLOHEXANE	2.87	1.96	2.69	1.87	
2,3-DIMETHYL PENTANE *	13.37	11.22	12.66	12.71	
2-METHYLHEXANE *	14.15	11.88	13.40	13.45	
CYCLOHEXENE					
3-METHYLHEXANE	9.91	8.26	8.68	9.21	
1,2-DICHLOROPROPANE					
2,3-DICHLOROPROPENE					
TRICHLOROETHENE				2.75	
2,2,4-TRIMETHYL PENTANE			1.30	1.18	

1-HEPTENE				
HEPTANE	7.09	6.18	6.34	6.70
1-CHLORO-3-METHYLBUTANE				
TRANS-2-HEPTENE				
METHYLCYCLOHEXANE	2.88	2.68	3.78	3.04
4-METHYLCYCLOHEXENE				
2,5-DIMETHYLHEXANE	0.78		0.85	0.80
1-CHLOROPENTANE				
1,1,2-TRICHLOROETHANE				
TOLUENE	105.42	92.66	149.83	148.56
1,3-DICHLOROPROPANE				
2-METHYLHEPTANE	5.29	2.96	3.51	3.23
4-METHYLHEPTANE			1.24	1.23
3-METHYLHEPTANE	3.64	3.23	3.93	3.53
1,2-DIBROMOETHANE				
1-OCTENE				
TRANS-1,2-DIMETHYLCYCLOHEXANE				
TRANS-4-OCTENE				
TETRACHLOROETHENE				
OCTANE	2.46	2.28	2.73	2.51
2-METHYL-1-HEPTENE				
2-OCTENE				
CIS-1,2-DIMETHYLCYCLOHEXANE				
CHLOROBENZENE				
ETHYLCYCLOHEXANE *	1.01		1.07	0.83
PROPYLCYCLOPENTANE *	1.27		1.97	1.53
1-CHLOROHEXANE				
ETHYLBENZENE	46.49	42.97	128.17	69.92
M-XYLENE	70.23	66.26	132.19	89.96
4-METHYLOCTANE				
2-METHYLOCTANE			2.07	
STYRENE			10.71	
1,4-DICHLOROBUTANE				
O-XYLENE	16.23	14.60	31.91	20.24
1,1,2,2-TETRACHLOROETHANE				
1,2,3-TRICHLOROPROPANE	2.20		3.29	
1-NONENE				
NONANE	4.03	4.24	4.42	3.52
ISOPROPYLBENZENE	3.25	3.04	8.52	4.26
2-CHLOROTOLUENE		2.02		
3-CHLOROTOLUENE				
PROPYLBENZENE		2.29	5.13	
4-CHLOROTOLUENE	0.89			0.85
3-ETHYLTOLUENE	23.97	16.48	39.65	20.92
4-ETHYLTOLUENE		10.41	25.04	13.45
1,3,5-TRIMETHYLBENZENE	16.08	19.23	39.19	22.38
2-ETHYLTOLUENE				
tert-BUTYLBENZENE *	27.17	45.46	68.22	47.65
1,2,4-TRIMETHYLBENZENE *				
1,3-DICHLOROBENZENE				
1-DECENE				
(CHLOROMETHYL)BENZENE				
1,5-DICHLOROPENTANE				
DECANE	5.70	10.39	8.56	8.14
SEC-BUTYLBENZENE				
3-(CHLOROMETHYL)HEPTANE				
1,2,3-TRIMETHYLBENZENE				
1-ISOPROPYL-4-METHYLBENZENE		7.13		3.95
1,2-DICHLOROBENZENE		6.31	2.98	4.12
INDAN	110.17	129.50	334.22	178.35
BUTYLCYCLOHEXANE				
1,3-DIETHYLBENZENE			2.44	
1,4-DIETHYLBENZENE		3.72	2.52	3.01
BUTYLBENZENE		3.30		
1,2-DIETHYLBENZENE				
UNDECANE	5.02	8.08	7.32	8.95

DECAHYDRONAPHTHALENE	2.75	10.71	13.76
1235-TETRAMETHYLBENZENE			
1234-TETRAMETHYLBENZENE			
1234-TETRAHYDRONAPHTHALENE		2.95	3.48
1,4-DIISOPROPYLBENZENE			
DODECANE			

Total Compounds Identified	46.00	44.00	53.00	52.00
Total # of Peaks	85.00	81.00	100.00	105.00
Total Area of Peaks	28651.50	16588.47	53345.28	41281.84
Area of Identified Peaks	19450.14	11219.36	36452.58	26908.89
Area % Identified Peaks	67.88	67.63	68.33	62.76
	++	++	++	++
Total hydrocarbons ug/m ³ :	923.42	901.10	1650.33	1208.90
Alkanes ug/m ³	278.68	264.42	310.57	238.99
Cycloalkanes ug/m ³	22.25	16.63	24.32	18.83
Alkenes ug/m ³	20.86	18.18	25.59	14.62
Cycloalkenes ug/m ³	0.00	0.00	0.00	0.00
Alkynes ug/m ³	0.00	0.00	0.00	0.00
Aromatics ug/m ³	545.01	579.36	1169.51	849.82
Chlorinated alkanes ug/m ³	55.73	14.18	117.36	78.92
Chlorinated alkenes ug/m ³	0.00	0.00	0.00	2.75
Chlorinated aromatics ug/m ³	0.89	8.33	2.98	4.97
Toluene:Ethylbenzene	2.27	2.16	1.17	2.12
Benzene:Ethylbenzene	2.63	2.60	1.49	2.97
Xylenes:Ethylbenzene	1.86	1.88	1.28	1.58
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00	1.00

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WHICH CANNOT AT THIS TIME BE QUANTIFIED

HARDOM : D001

Start: 85/10/16 10:55 Scan: 60 sec
 Average: 30.00 min Report: 10.00 min
 Loc: Merging of the 6 MP's ...downwind of Damtar

Time	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
10:55-11:25	.5 .017	.010 10.3	1.78 1023.8	- 15.	.77 356.	.98	.07	.03	.04	.028
11:05-11:35	.4 .020	.014 10.7	2.00 1023.2	- 15.	.99 353.	.97	.08	.02	.06	.034
11:15-11:45	.5 .024	.018 10.9	2.09 1023.3	- 13.	1.07 352.	.98	.08	.02	.06	.032
11:25-11:55	1.2 .035	.026 11.6	2.58 1023.4	- 10.	1.47 344.	.99	.09	.02	.07	.038
11:35-12:05	3.0 .036	.032 * 12.3	3.29 1023.5	- 8.	2.25 315.	.99	.08	.02	.07	.047
11:45-12:15	3.9 .036	.032 * 12.7	3.80 1023.6	- 8.	2.77 283.	.98	.09	.02	.08	.051
11:55-12:25	4.3 .028	.034 * 12.8	4.05 1023.6	- 10.	3.02 271.	.98	.09	.02	.08	.044
12:05-12:35	3.9 .025	.029 * 12.6	3.66 1023.7	- 8.	2.62 274.	.99	.11	.03	.09	.033
12:15-12:45	4.5 .025	.025 12.9	3.78 1023.8	- 8.	2.75 268.	.99	.13	.03	.10	.037
12:25-12:55	3.8 .018	.018 12.6	3.35 1023.9	- 8.	2.31 300.	.99	.13	.03	.10	.030
12:35-13:05	3.3 .018	.023 12.4	3.58 1024.0	- 12.	2.54 294.	.99	.13	.03	.10	.038
12:45-13:15	2.8 .015	.027 * 11.8	2.94 1024.1	- 15.	1.98 328.	.99	.11	.03	.08	.024
12:55-13:25	- -	- -	- -	- -	- -	-	-	-	-	-
13:05-13:35	- -	- -	- -	- -	- -	-	-	-	-	-
13:15-13:45	- -	- -	- -	- -	- -	-	-	-	-	-
13:25-13:55	- -	- -	- -	- -	- -	-	-	-	-	-

Time	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
13:35-14:05	-	-	-	-	-	-	-	-	-	-
13:45-14:15	-	-	-	-	-	-	-	-	-	-
13:55-14:25	-	-	-	-	-	-	-	-	-	-
14:05-14:35	1.0 .022	.038 + 23.3	4.17 1023.7	- 20.	3.22 254.	.93	.05	.02	.03	.056
14:15-14:45	1.1 .023	.037 + 23.2	4.29 1023.5	- 20.	3.34 257.	.94	.06	.02	.04	.058
14:25-14:55	1.0 .023	.039 + 23.2	4.35 1023.2	- 20.	3.48 253.	.94	.06	.02	.04	.051
14:35-15:05	1.0 .021	.037 + 23.1	4.13 1022.8	- 19.	3.19 255.	.93	.06	.02	.04	.057
14:45-15:15	.9 .020	.038 + 23.0	4.08 1022.6	- 20.	3.15 253.	.93	.05	.01	.04	.059
14:55-15:25	1.1 .021	.038 + 23.2	3.99 1022.4	- 18.	3.05 252.	.94	.07	.01	.05	.058
15:05-15:35	1.2 .022	.025 23.2	3.45 1022.1	- 18.	2.45 241.	.98	.08	.02	.06	.029
15:15-15:45	1.3 .021	.014 23.1	2.92 1021.8	- 17.	1.98 236.	1.00	.09	.03	.06	.024
15:25-15:55	1.3 .020	.006 23.0	2.53 1021.5	- 20.	1.58 236.	1.00	.08	.03	.05	.027
15:35-16:05	1.2 .023	.005 23.2	2.56 1021.4	- 21.	1.55 239.	.99	.07	.03	.05	.032
15:45-16:15	1.2 .025	.006 23.4	2.60 1021.1	- 22.	1.68 239.	.98	.07	.02	.04	.038
15:55-16:25	-	-	-	-	-	-	-	-	-	-
16:05-16:35	-	-	-	-	-	-	-	-	-	-
16:15-16:45	-	-	-	-	-	-	-	-	-	-

Time	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
16:25-16:55	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
16:35-17:05	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
16:45-17:15	.8 .032	nd 16.3	2.05 1021.0	nd 11.	.63 68.	1.42	.11	.06	.04	.013
	.036	16.5	1020.9	10.	.56 69.	1.43	.11	.06	.04	.012
16:55-17:25	.8 .040	nd 16.9	2.00 1020.7	nd 10.	.69 70.	1.42	.11	.06	.04	.010
	.044	17.1	1020.6	10.	.76 70.	1.38	.10	.05	.03	.008
17:25-17:55	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
17:35-18:05	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
17:45-18:15	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
17:55-18:25	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
18:05-18:35	.9 .015	.012 20.5	2.61 1010.6	.02 17.	1.34 202.	1.27	.10	.05	.04	.025
	.009	20.2	1010.5	16.	202.	1.27	.12	.06	.05	.020
18:15-18:45	1.0 .007	.011 19.8	2.61 1010.7	.02 17.	1.34 199.	1.30	.13	.07	.05	.013
	.009	19.5	1010.8	18.	199.	1.32	.13	.07	.05	.014
18:25-18:55	.9 .007	.010 19.8	2.52 1010.7	.02 17.	1.22 199.	1.30	.13	.07	.05	.013
	.009	19.5	1010.8	18.	199.	1.32	.13	.07	.05	.014
18:35-19:05	.9 .009	.008 19.5	2.44 1010.8	.01 18.	1.13 199.	1.32	.13	.07	.05	.014
	.013	19.3	1010.9	19.	199.	1.32	.11	.06	.03	.017
18:45-19:15	1.0 .013	.009 19.3	2.37 1010.9	.01 19.	1.05 204.	1.32	.10	.05	.03	.022
	.016	19.5	1010.7	19.	200.	1.32	.10	.05	.03	.024
18:55-19:25	1.0 .016	.013 19.5	2.42 1010.7	nd	1.10 200.	1.31	.09	.05	.03	.022
	.017	19.7	1010.6	17.	200.	1.31	.09	.05	.03	.022

Time	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
19:15-19:45	1.1 .015	.014 19.7	2.52 1010.3	nd 15.	1.21 201.	1.32	.12	.06	.05	.019
19:25-19:55	1.2 .012	.012 19.7	2.58 1010.2	nd 15.	1.26 198.	1.31	.14	.07	.06	.018
19:35-20:05	1.3 .008	.015 19.4	2.63 1010.1	nd 15.	1.33 204.	1.30	.15	.07	.07	.022
19:45-20:15	1.3 .005	.023 19.0	2.72 1010.1	nd 16.	1.45 209.	1.27	.12	.06	.05	.027
19:55-20:25	1.4 .005	.024 18.9	2.54 1010.3	nd 17.	1.28 212.	1.26	.11	.06	.04	.021
20:05-20:35	-	-	-	-	-	-	-	-	-	-
20:15-20:45	-	-	-	-	-	-	-	-	-	-
20:25-20:55	-	-	-	-	-	-	-	-	-	-
20:35-21:05	-	-	-	-	-	-	-	-	-	-
20:45-21:15	-	-	-	-	-	-	-	-	-	-
20:55-21:25	-	-	-	-	-	-	-	-	-	-
21:05-21:35	4.8 .009	.032 * 9.0	3.31 1008.1	nd 11.	2.68 234.	1.02	.06	.01	.05	.058
21:15-21:45	4.0 .009	.034 * 8.9	3.39 1007.9	nd 11.	2.78 233.	1.02	.05	.01	.04	.054
21:25-21:55	3.1 .009	.027 9.7	3.19 1007.5	nd 8.	2.52 243.	1.02	.05	.02	.04	.036
21:35-22:05	3.0 .008	.022 8.5	3.00 1007.3	nd 7.	2.31 243.	1.00	.06	.02	.04	.033
21:45-22:15	3.9 .006	.027 8.5	3.25 1007.2	.01 6.	2.62 253.	1.01	.08	.03	.05	.037
21:55-22:25	3.9 .006	.049 * 8.5	3.84 1007.3	.01 8.	3.39 248.	1.01	.09	.03	.06	.055

Time	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
22:05-22:35	4.9 .005	.077 * 8.6	4.40 1007.4	.01 9.	4.11 257.	1.02	.09	.03	.06	.063
22:15-22:45	5.0 .005	.064 * 8.7	4.42 1007.4	.02 9.	4.12 263.	1.04	.09	.03	.06	.056
22:25-22:55	5.0 .005	.091 * 8.8	4.36 1007.4	.02 9.	4.03 273.	1.04	.09	.03	.06	.054
22:35-23:05	4.3 .005	.091 * 9.0	4.07 1007.4	.02 8.	3.68 266.	1.03	.10	.03	.07	.038
22:45-23:15	3.9 .006	.088 * 8.9	4.14 1007.2	.02 9.	3.79 254.	1.01	.10	.03	.07	.042
22:55-23:25	4.8 .005	.075 * 8.9	3.84 1007.1	.01 7.	3.39 249.	1.01	.09	.03	.07	.029
23:05-23:35	4.2 .004	.039 * 8.7	3.14 1007.1	.01 7.	2.49 284.	1.00	.07	.03	.05	.020
23:15-23:45	3.6 .003	.021 8.6	2.48 1007.2	.02 9.	1.60 314.	1.01	.06	.03	.03	.008
23:25-23:55	3.1 .003	.004 8.6	2.15 1007.2	.03 9.	1.14 322.	1.02	.06	.03	.03	.005
23:35-00:05	-	-	-	-	-	-	-	-	-	-
23:45-00:15	-	-	-	-	-	-	-	-	-	-
23:55-00:25	-	-	-	-	-	-	-	-	-	-
85/10/17										
00:05-00:35	-	-	-	-	-	-	-	-	-	-
00:15-00:45	-	-	-	-	-	-	-	-	-	-
00:25-00:55	-	-	-	-	-	-	-	-	-	-

Statistics	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
Units	ppm W/cm^2	ppm d C	ppm mbar-msl	ppm km/h	ppm deg	ppm	ppm	ppm	ppm	ppm
Arith. Mean	2.13 .0167	.0261 15.3	3.051 1015.6	.013 -	2.015 -	1.129	.092	.036	.054	.032
Std. Dev.	2.57 .0136	.0297 5.7	1.007 7.1	.011 -	1.211 -	.227	.036	.019	.028	.035
Geo. Mean	1.37 -	.0139 -	2.897 -	.010 -	1.676 -	1.110	.085	.030	.047	.018
Geo.Std.Dev	2.57 -	3.6462 -	1.377 -	2.044 -	1.872 -	1.197	1.498	2.007	1.721	3.243
Min Reading	.05 .0006	.0010 8.2	1.394 1006.9	.005 .1	.259 .5	.908	.024	.005	.005	.002
Max Reading	25.01 .0703	.2769 24.0	6.833 1024.3	.079 30.3	7.300 359.8	1.938	.243	.098	.194	.201
Min Average	.39 .0031	.0010 8.5	1.783 1007.1	.005 5.5	.565 68.5	.928	.050	.012	.027	.005
Max Average	4.97 .0437	.0906 23.4	4.423 1024.1	.035 22.1	4.119 355.8	1.431	.150	.069	.101	.063
# Valid Rdgs	711. 711.	711. 711.	711. 711.	390. 711.	711. 711.	711.	711.	711.	711.	711.
Min.Det.Lev	.10 -	.0020 -	.100 950.0	.010 -	.100 -	.100	.010	.010	.010	.004
1/2hr Std	5.28 -	.0270 -	- -	.300 -	- -	-	.270 -	- -	-	.100

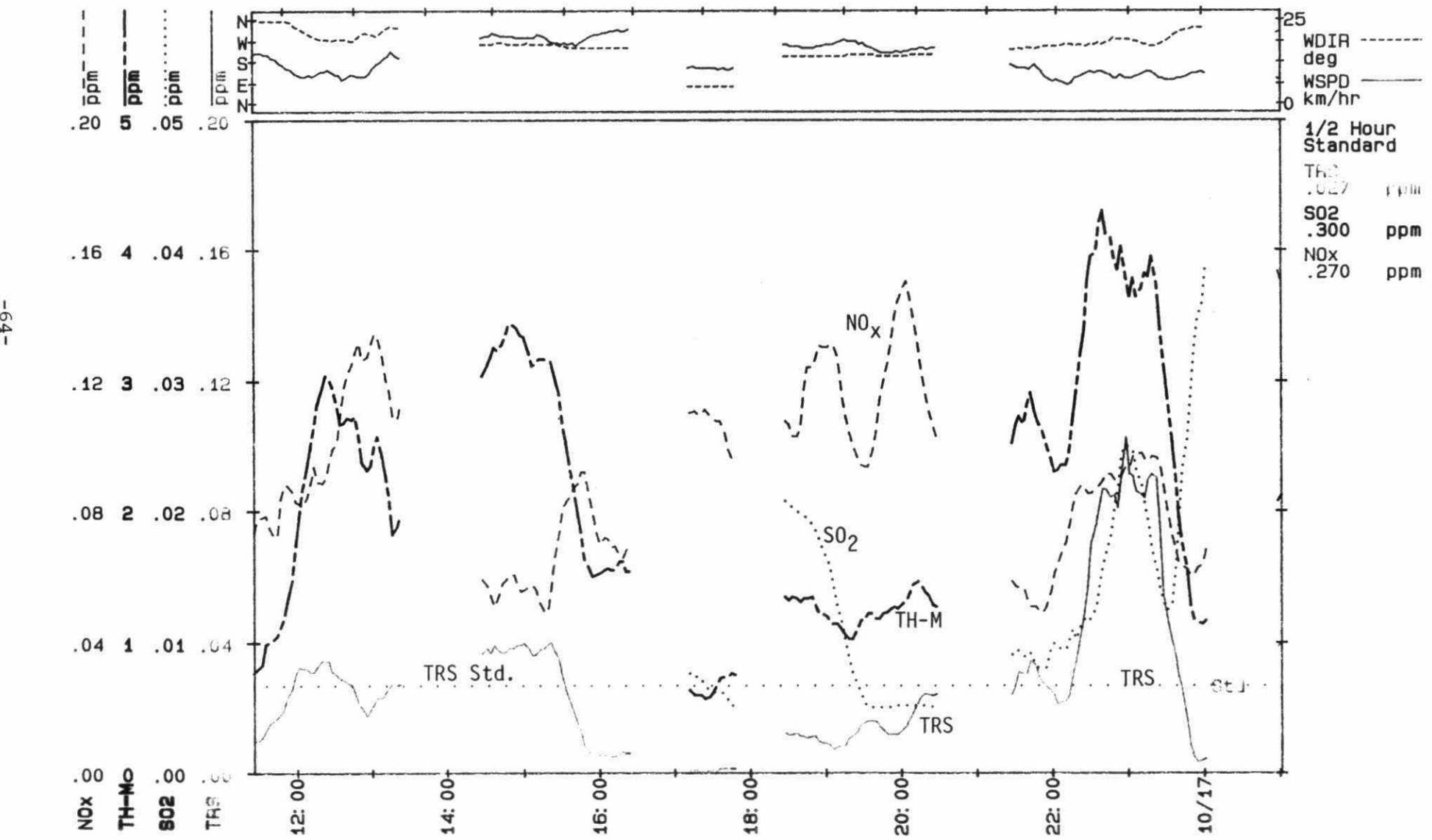
- Invalid Data / Not Calculated
 nd Average is less than Min. Detectable Level
 m One or more readings Missing
 + Average is above Provincial Std/Criteria

Percent Valid Data Required for Valid Average: 90.0 %
 Averaging Started at Nearest: .0 min

HAMDOM: D001

Start: 85/10/16 10:55 Scan: 60 sec. Ave: 30.00 min.
 Loc: Merging of the 6 MP's ...downwind of Domtar

.029 11 83	.024 13 72	--	.022 23 40	.022 23 42	--	.036 16 --	--	.014 19 --	.005 19 --	--	.008 9 --	.005 9 --	.003 9 --	SRAD W/cm ²
1023	1024		1024	1022		1021		1011	1010		1007	1007	1007	TEMP d C
														HUM %-rel
														BAR mbar-msl



HAMDOM : U001

Start: 05/10/16 12:31 Scan: .60 sec
 Average: 30.00 min Report: 10.00 min
 Loc: Merging of 3 MP's.....upwind of Dohtar

Time	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
12:31-13:01	- .031	nd 21.8	1.83 1023.8	.02 20.	.48 223.	1.31	.03	.02	nd	.009
12:41-13:11	- .028	nd 21.8	1.85 1023.7	.02 20.	.43 221.	1.31	.03	.02	nd	.008
12:51-13:21	- .027	nd 21.7	1.83 1023.6	.02 22.	.43 221.	1.30	.03	.01	.01	.009
13:01-13:31	1.0 .028	nd 21.7	1.84 1023.4	.02 22.	.44 219.	1.38	.02	nd	.01	.009
13:11-13:41	1.0 .027	nd 21.7	1.85 1023.2	.02 22.	.44 219.	1.31	.02	nd	nd	.009
13:21-13:51	.9 .025	nd 21.8	1.85 1023.1	.01 22.	.43 218.	1.32	.03	.01	nd	.012
13:31-14:01	- .026	- 21.8	1.89 1023.1	nd 21.	.43 220.	1.34	.03	.02	nd	.012
13:41-14:11	- .028	- 22.0	1.97 1023.1	nd 17.	.48 217.	1.37	.04	.02	.01	.013
13:51-14:21	- .027	- 22.2	2.03 1023.0	nd 15.	.51 210.	1.40	.04	.02	.01	.008
14:01-14:31	- .026	- 22.3	2.04 1022.9	nd 15.	.53 205.	1.41	.05	.02	.02	.006
14:11-14:41	1.3 .025	- 22.4	2.01 1022.6	nd 18.	.51 202.	1.40	.04	.02	.02	.005
14:21-14:51	1.3 .029	nd 22.5	2.00 1022.4	nd 18.	.51 204.	1.39	.04	.02	.02	.008
14:31-15:01	1.3 .030	nd 22.6	1.98 1022.2	nd 18.	.51 203.	1.37	.04	.02	.01	.012
14:41-15:11	1.4 .027	nd 22.5	1.98 1022.0	nd 18.	.52 203.	1.36	.05	.02	.02	.014
14:51-15:21	1.4 .019	nd 22.2	1.95 1021.8	nd 18.	.53 201.	1.33	.05	.03	.02	.014
15:01-15:31	1.3 .015	nd 21.7	1.95 1021.7	nd 17.	.54 202.	1.33	.06	.03	.02	.013

Time	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
15:11-15:41	1.5 .013	nd 21.2	1.97 1021.6	nd 18.	.56 200.	1.33	.06	.03	.02	.012
15:21-15:51	- -	- -	- -	- -	- -	-	-	-	-	-
15:31-16:01	- -	- -	- -	- -	- -	-	-	-	-	-
15:41-16:11	- -	- -	- -	- -	- -	-	-	-	-	-
15:51-16:21	- -	- -	- -	- -	- -	-	-	-	-	-
16:01-16:31	- -	- -	- -	- -	- -	-	-	-	-	-
16:11-16:41	- -	- -	- -	- -	- -	-	-	-	-	-
16:21-16:51	1.0 .005	nd 19.6	1.76 1010.5	- 29.	.76 234.	.99	.10	.06	.04	nd
16:31-17:01	1.3 .006	nd 19.3	1.87 1010.4	- 28.	.85 234.	1.00	.10	.06	.04	nd
16:41-17:11	1.4 .009	nd 19.1	1.98 1010.3	- 28.	.86 235.	1.01	.10	.06	.04	nd
16:51-17:21	1.4 .013	nd 19.3	1.98 1010.1	- 28.	.86 238.	1.02	.09	.05	.04	nd
17:01-17:31	1.3 .014	nd 19.6	1.85 1010.0	- 27.	.83 240.	1.00	.09	.05	.04	nd
17:11-17:41	1.4 .014	.002 19.8	1.98 1009.9	- 25.	.88 239.	1.01	.10	.05	.05	nd
17:21-17:51	1.7 .011	.002 19.9	1.93 1009.1	- 25.	.91 237.	1.01	.11	.05	.06	nd
17:31-18:01	1.6 .009	nd 19.6	1.98 1008.6	- 28.	.87 238.	1.01	.10	.05	.05	nd
17:41-18:11	- -	- -	- -	- -	- -	-	-	-	-	-
17:51-18:21	- -	- -	- -	- -	- -	-	-	-	-	-

Time	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
18:01-18:31	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
18:11-18:41	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
18:21-18:51	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
18:31-19:01	4.6 .003	.002 9.1	3.44 1008.1	- 24.	1.60 288.	1.83	.10	.06	.04	.018
18:41-19:11	4.2 .003	.002 9.0	3.32 1008.1	- 25.	1.46 288.	1.85	.10	.06	.04	.020
18:51-19:21	3.0 .004	nd 9.0	3.21 1008.0	- 24.	1.35 285.	1.85	.10	.06	.04	.017
19:01-19:31	2.6 .005	nd 9.0	3.14 1007.9	- 22.	1.29 283.	1.84	.10	.06	.04	.017
19:11-19:41	1.6 .004	nd 9.0	3.07 1007.7	- 19.	1.22 284.	1.84	.10	.06	.04	.016
19:21-19:51	1.0 .003	nd 9.0	3.10 1007.5	- 18.	1.21 286.	1.85	.10	.05	.04	.014
19:31-20:01	1.2 .002	nd 9.0	3.09 1007.6	- 18.	1.17 287.	1.87	.10	.06	.04	.014

Statistics	CO SolarRad	TRS Temp	THC Barom	SO2 Wind-Spd	Non-CH4 Wind-Dir	Methane	NOx	NO2	NO	Ozone
Units	ppm W/cm^2	ppm d C	ppm mbar-msl	ppm km/h	ppm deg	ppm	ppm	ppm	ppm	ppm
Arith. Mean	1.60 .0156	.0015 18.3	2.204 1015.8	.018 -	.778 -	1.368	.070	.039	.028	.009
Std. Dev.	1.96 .0113	.0010 5.2	.592 7.8	.006 -	.385 -	.303	.033	.021	.018	.010
Geo. Mean	1.09 -	.0013 -	2.137 -	.008 -	.698 -	1.336	.061	.033	.021	.006
Geo.Std.Dev	2.60 -	1.6288 -	1.269 -	1.778 -	1.578 -	1.244	1.848	1.991	2.264	2.687
Min Reading	.05 .0017	.0010 8.0	1.478 998.5	.005 8.0	.310 175.0	.961	.005	.005	.005	.002
Max Reading	15.35 .0495	.0100 22.9	3.938 1024.2	.019 43.1	2.161 311.9	2.045	.141	.106	.102	.078
Min Average	.94 .0025	.0010 9.0	1.756 1007.5	.005 15.1	.403 200.3	.987	.020	.008	.007	.002
Max Average	4.61 .0314	.0025 22.6	3.439 1023.8	.018 29.5	1.598 288.5	1.872	.186	.062	.057	.028
# Valid Rdgs	384. 396.	378. 396.	396. 396.	197. 396.	396. 396.	396.	396.	396.	396.	396.
Min.Det.Lev	.10 -	.0020 -	.100 950.0	.010 -	.100 -	.100	.010	.010	.010	.004
1/2hr Std	5.20 -	.0270 -	- -	.300 -	- -	-	.270	-	-	.100

- Invalid Data / Not Calculated

nd Average is less than Min. Detectable Level

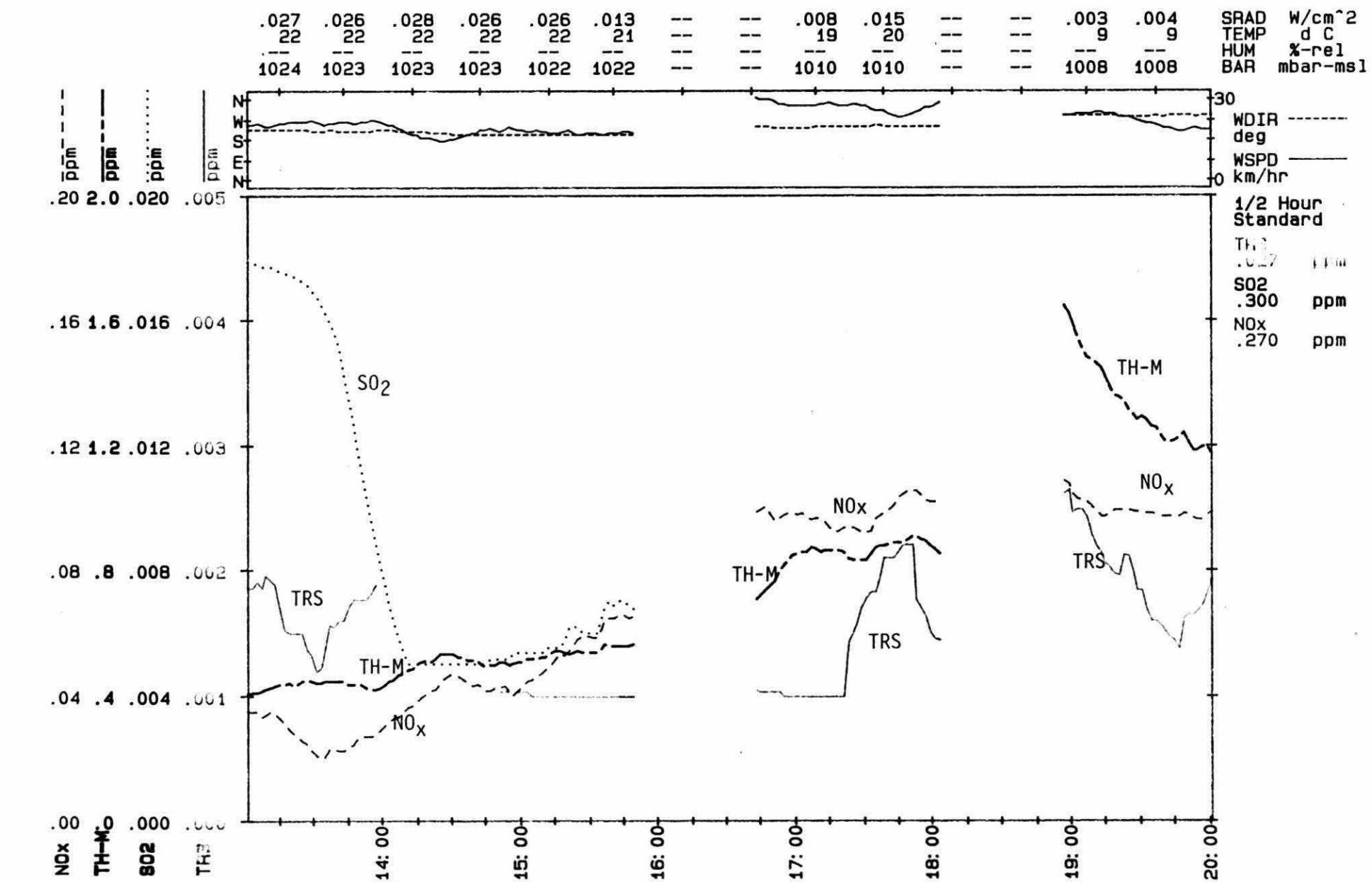
m One or more readings Missing

* Average is above Provincial Std/Criteria

Percent Valid Data Required for Valid Average: 90.0 %
 Averaging Started at Nearest: .0 min

HAMDOM: U001

Start: 85/10/16 12:31 Scan: 60 sec. Ave: 30.00 min.
Loc: Merging of 3 MP's.....upwind of Domtar



Start: 85/10/15 10:55 Scan: 60 sec
Average: 30.00 min Rnd Time: .00 min
Duration: 14.10 hrs No. Averages: 28
Loc: Merging of the 6 MP's ...downwind of Dohtar
% Valid Data Required: 90.0 %
Values < MDL are NOT Included
* = Corr. Signif. at 5.0 % Level, 2-Sided Test

--- CORRELATION COEFFICIENTS ---

	CO	TRS	SO2	Non-CH4	NOx
CO	1.000	.678*	-.078	.701*	-.009
TRS	.678*	1.000	-.384	.866*	-.073
SO2	-.078	-.384	1.000	-.469	-.541
Non-CH4	.701*	.866*	-.469	1.000	-.272
NOx	-.009	-.073	-.541	-.272	1.000

Start: 85/10/16 12:31 Scan: .60 sec
Average: .30.00 min Rnd Time: .00 min
Duration: 7.50 hrs No. Averages: 15
Loc: Merging of 3 MP's.....upwind of Domtar
% Valid Data Required: 98.0 %
Values < MDL are NOT included
* = Corr. Signif. at 5.0 % Level, 2-Sided Test

--- CORRELATION COEFFICIENTS ---

	CO	TRS	SO2	Non-CH4	NOx
CO	1.000	-	-	.806*	.469
TRS	-	-	-	-	-
SO2	-	-	-	-	-
Non-CH4	.806*	-	-	1.000	.857*
NOx	.469	-	-	.857*	1.000

9561
453
40
2388
01